

ARTHUR MEE'S WONDERFUL DAY



By the Editor of The Children's Newspaper

GEORGE HERBERT ARMSTRONG

CHRISTMAS 1925.

— FROM —

HUNT JESSIE

AND "PEG"

UNCLE REG.





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ARTHUR MEE'S WONDERFUL DAY

Books by Arthur Mee

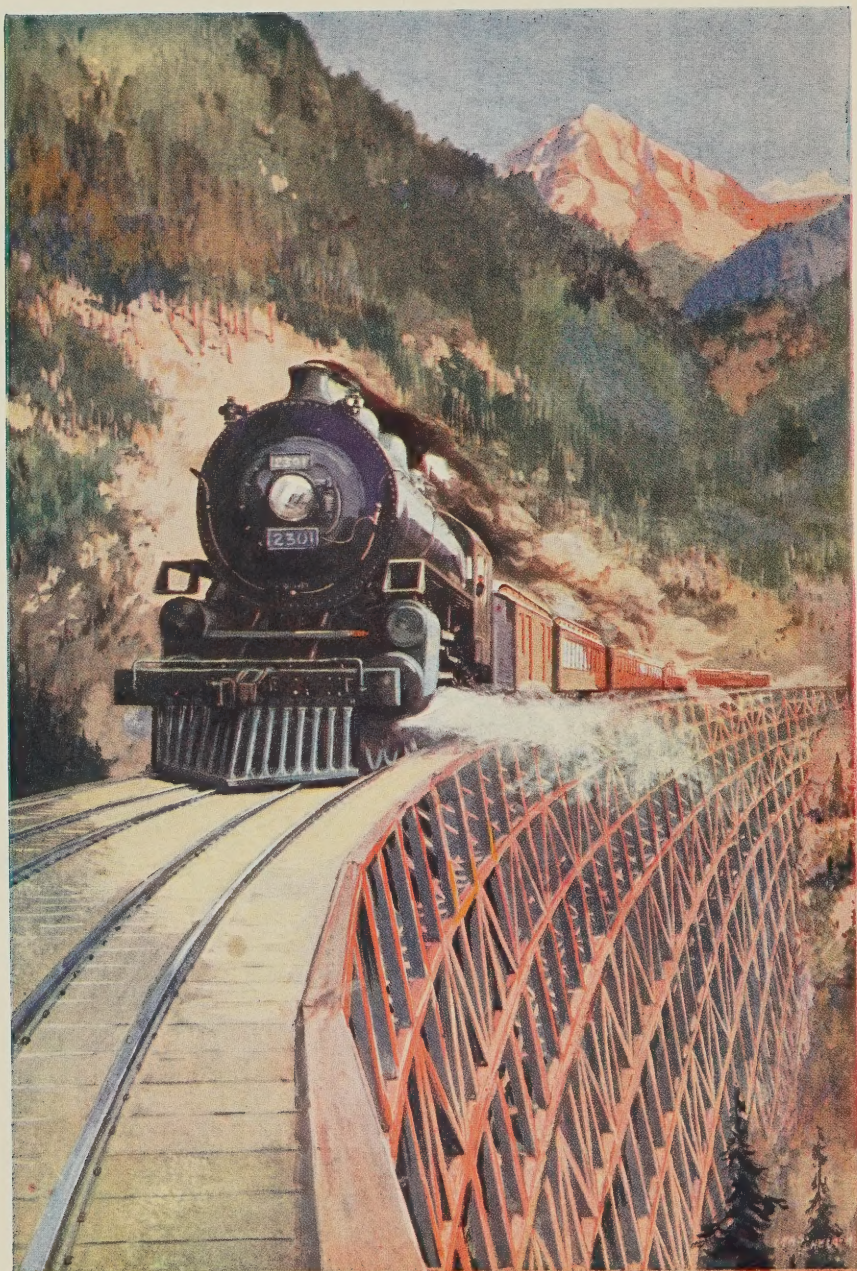
LITTLE TREASURE ISLAND
ARTHUR MEE'S HERO BOOK
EVERY CHILD'S CREED
LETTERS TO BOYS
LETTERS TO GIRLS
ARTHUR MEE'S GOLDEN YEAR

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THE COLOSSUS OF THE IRON AGE, DRIVEN ACROSS THE EARTH BY THE CEASELESS
BOMBARDMENT OF INVISIBLE ATOMS OF STEAM

ARTHUR MEE'S WONDERFUL DAY

By the Editor of
The Children's Newspaper

What hath this day deserved
What hath it done?
That it in golden letters should be set
Among the high tides in the calendar?

Shakespeare

HODDER AND STOUGHTON LTD.

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TO THE
WONDERFUL FRIENDS OF ALL MY DAYS

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FROM HOUR TO HOUR

Time, like an ever-rolling stream, moves on. It is here ; it is gone. The hour that yesterday was to be born is today among our memories. The hours are days, the days are years, the years become a lifetime, and we sail an unknown sea to that Eternity which is our home.

Yet who would leave the hours and days if he could stay with them ? Who would give the glory of a day for all the unknown years, the glory of this world for all the world to come may hold ? Thrilling and wonderful is the life of a day.

We wake up with the Dawn and see the marvellous unfolding of the glory of the Earth. We feel the glow of the morning and the solemn beauty of the quiet fields. We stand as if we heard the voice of Nature talking, as if we heard the heart of Matter beating. Men talk of miracles as if they were dead, but what a miracle that we wake up each morning as part of the Dawn ! The garden is afire with gold, the lark is at the gate of Heaven, the trees are yearning for the sun, and in the hills is the still small voice that speaks to every man. Solemn and stirring are the splendours of the Dawn.

And then we reach high Noon—the hour of the heat and burden of the day. The great wheels are going round. Engines are racing over land and over sea, and men are riding on them in the clouds. A man speaking in a room in London is heard in Paris ; an orchestra playing in America is heard in Europe ; a man clicks out the news of the world across the Earth. The energies of men are everywhere, boring through the Alps, diving into the sea, harnessing invisible powers to drive the world's machines, hewing coal from the depths of the earth, pouring light and water into our houses,

keeping plague out of our cities, making books and music and pictures and papers which tell us every morning what a sad world, what a mad world, what a glad world this is. Wonderful it is to see the drama of the life of men at Noon.

Now comes still Evening on. It is the quiet hour. We go home in the setting sun and watch the glory of the fading day. The red poppies are shutting their leaves ; the daisies close their eyes ; the rabbits are about. The things we have heard and seen and talked of, the books and pictures that have come our way, the places we have been to—how they crowd our mind ! We sit by the fire and think of lovely things. We remember the friends we shall not see again. We sit and dream and dream. Gracious and sweet is the Evening time.

And now comes Night, night with its mysteries, its silences, its stars, its storms ; “night with her train of stars, and her great gift of sleep.” We look up at the Moon, the dead child of Earth, and stand there wondering. What does it mean, this world of ours, this life of ours ? Where have we come from ? Where are we going ? Have we lived before ? Shall we live again ? Through our minds the wondering questions run, at times too great for words, at times too deep for tears. We can only trust in Him whose word we have that while the Earth remaineth seed-time and harvest, cold and heat, summer and winter, shall not cease. Night falls, but the stars look down, and all is well. He who has brought us thus far will not fail us now ; we shall know in His good time. Through another night our lives are in His keeping, and He will bring us to another Dawn.

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DAWN

*Bliss was it in that Dawn to be alive
And to be young was very heaven*

Wordsworth

*Our Father
Who art in Heaven,
Hallowed be thy Name,
Thy kingdom come,
Thy will be done on Earth as it
is in Heaven.
Give us this day our daily bread,
And forgive us our trespasses
As we forgive them that trespass
against us.
And lead us not into temptation,
But deliver us from evil,
For thine is the kingdom,
The power, and the glory,
For ever and ever. Amen.*

A pleasant thing it is for the eyes to behold the sun, and may we not thank God for him who made it easy to get more sunshine in our lives? He fought against ignorance and wisdom, and he died, but still the Will of William Willett gives us an hour of sunlight every summer day.

THE SPLENDOUR OF THE DAWN

HE who wakes with the Dawn, and steals an hour of sunlight from his sleep, gives himself something that is better than gold. No millionaire could give us more.

An hour of sunlight! Have you thought what it means? It means for every human being, however poor, a treasure no riches can equal. The riches of the poor are rare and everlasting if we only seek them; you will find them in the fields on any summer's day, in the garden and the wood, over the gate where the bluebells nod their heads and the daffodils dance. You will see them hanging on the trees, spreading themselves across the heath, and creeping over the old stone wall. The best things in the world are free for all who will; and the Sun—he is our millionaire, from whom we have all that we have, to whose bright light we owe all the glory of the Earth by day and the stars by night. We love to be in his great company; it is our day of glittering gold.

Civilisation has much to answer for, and one of the sins of its youth is that it drove the people from the sun. It is civilisation that has driven us out at night, and kept us busy at our work long after the Sun has gone down. It is civilisation that has sent us late to bed and brought us down late in the morning, for in the days before gas came men lived a natural day, waking with the sunrise and sleeping at sunset. Maids used to rise at three in

the morning ; the student would begin prayers at five and study from six till ten. Dinner was at ten and supper at five. Every play that Shakespeare saw was played in daylight. People sat in little square theatres without roofs, the sun pouring down on them as they sat showing off their fine clothes. Queen Elizabeth supped at six ; it was in the full light of day that she spat on ambassadors and boxed the ears of her courtiers. Merchants would begin the day at six or seven, and Pepys was at the Admiralty at four in the morning. Milton, too, found Paradise with the dawn.

But civilisation has her virtues, too ; she comes to us laden with blessings. With her flickering tallow candles, her dim little lamps, and then at last with a bright gas jet, she swept the streets of towns and cities free of all those fearful men who loved darkness rather than light because their deeds were evil. Europe was still shaking with the French Revolution when William Murdoch walked home across the moors with a gas lantern and lit his cottage at Redruth with gas.

And the light came not a day too soon. It is hard for us to realise what that dark world was like. A man who kept a diary in those days has told us that he used to sit in his coach with his sword drawn when obliged to go out after dark. Gangs of thieves a hundred strong roved the streets, and a well-known lady in London used to carry a purse of bad money about with her to give to robbers. The invention of gaslight did more than all the preachers put together to transform the streets of London, yet there were men in pulpits who preached against gas as a thing that would profane the churches, as they had preached against the use of chloroform as a thing opposed to the will of God. We live and we learn, and we like

to remember that wise paper which asked in those days : “ What has the new light of all the preachers done for morality and order in London compared with the light of gas ? ” The truth is, of course, that gas, and all the means of light that scatter darkness, are mighty instruments of God.

But it was easier for a rich man to enter the Kingdom of Heaven than for a great idea to make its way in those days, and it was one of the greatest scientists of his day who mocked at gas and said, in a mighty way, “ You might as well try to light London with a slice of the Moon.” In the House of Commons, when the gas was first turned on, members of Parliament used to walk through the corridors feeling the pipes, expecting them to be hot ; and the Queen of England was so afraid of gas in Windsor Castle that she asked the man who had beaten Napoleon to cut it off for her ! A lady offered a shopkeeper in the Strand a big price if he would send the light in his window to her house ; and in Trafalgar year a paragraph in the Morning Post announced that a shop at the corner of Piccadilly was lit every evening with gas.

Now came the great change in manners and social ways. The tallow candles and oil lamps people used to hang outside their doors gave way to little gas lanterns. The old night watchman with his fire-pot, carrying light and calling the hour, slowly disappeared. People worked later, dined later, and slowly there came about the separation of the natural and the working day, so that now we turn night into day, and only one or two of us, though we may go to bed with the nightingale, get up with the lark.

And yet, if you would know how lovely this world is, you must get up with the Sun, be in at the beginning of “ one of those heavenly days that cannot die,” such a

day as when Wordsworth, standing on Westminster Bridge, saw the Sun rise over London :

Ne'er saw I, never felt, a calm so deep,
The river glideth at his own sweet will ;
Dear God ! the very houses seem asleep ;
And all that mighty heart is lying still.

In such an hour the Sun begins his work. He brings us the breeze from the sea, the dew on the grass, the fruits of the orchard, and the flowers of the field. With his coming in the morning the garden that looks so still is as busy as a workshop making engines. The Sun pours his light and heat down on the leaves, and the plant with his help obtains from the air the means of life ; it grows by day, and at night its work ends with the passing of the Sun ; it sleeps until he comes again, and it wakes up with the dawn so bright and beautiful that it is easy to believe the poet was right when he said it seemed to him " that every flower enjoys the air it breathes."

In front of me is my little Light Mill, like a little engine flying round and round with nothing to drive it but a fire about a hundred million miles away ; the Sun has only to look at it and off it goes, never stopping till the Sun has gone. William Willett gave us all an hour of sunlight, but my Light Mill is the promise of a greater gift than this, for it says, plainly enough for all mankind to understand, that one of these days the Sun that pours down on our gardens, that builds us up and makes us strong and puts the light of heaven in our eyes, will do all the work there is to do on Earth. For this vast furnace that gives us heat, this ball of fire that gives us light, is the power station of the universe. It pours out power in every hour that all the world's coal-mines in a year could never equal, and the sunlight falling

on our islands every day, when we have made it drive a wheel, will be enough to do all the work of men and horses and machines throughout the world.

The day will come when the sunlight that thrills us as we stand in it, that turns the clod to glittering gold as Shakespeare says, will do most of our work. Imprisoned down in our mines, we bring it up as coal; but we shall not for ever be dependent on the coal that holds within itself the sunlight of the past. If we were to set up proper machinery, something that would absorb the sunshine that falls on the Earth, we should simply need to gather the sunlight falling on a few square miles to equal all the power we get from mines.

No man can conceive the full power of the heat of the Sun. It is so great that if you took a glacier fifty miles thick and two hundred thousand miles long, and shot one of these into the Sun every second, the Sun would shrivel it up and melt it as you threw it in. The light and heat of the Sun go out to other worlds than ours, some so far away that while we go round the Sun once every year these other worlds go round him only a few times in a thousand years; and the heat that reaches Earth is so little of the whole that the Sun could afford to give the same amount to every man and woman and child alive—each one of us, that is to say, could have for ourselves as much sunshine as the whole world gets.

Such is the marvellous source of light, "God's eldest daughter," as old Andrew Fuller said. We are only beginning to know the glory of this world; it is good to think of the time that is coming. But we must get up with the Sun to be ready, for the Kingdom of Heaven comes with the dawn, and he who sleeps will miss it.

*The sun climbs over the hills, the lark is at the gate
of heaven, the dewdrop falls from the petal of the rose.
You can almost hear the stillness of the world, and
Nature giving every child its promise of goodwill.*

EVERY CHILD'S GOOD THINGS

I, NATURE, give to you, to be yours for ever and ever, the right to the free enjoyment of this world. I give to you the years that are before you, and the world that is about you.

I give to you the Sun by day and the Moon and stars by night, with the power to wake as the Earth rolls into the light of the Sun, and power to sleep when the night comes.

I give to you the beauty of the Earth in the golden hour of dawn, with the vision of the Sun as it climbs above the hills, with the glow of fire across the meadow and the sparkle on the river that runs past. The sight of the new stirring of the life of the world, the sound of all moving things that praise their Maker, the feeling that uplifts the heart as the light breaks on another day, are yours.

I give you the eager hope of spring, with the right to see the slow disrobing of the winter earth and the slow unveiling of her secret treasury. I give to you the untold glory of a summer's day, with the touch of God in every lane and the fire of the Sun in every rose. I give to you the eternal promise of autumn, with the faith of all growing things in the life that will come again. I give to you the peace of the Earth on a winter's day, with the robe of stainless white not made with hands. I give to

you the full glory of the changing year, and perfect trust in the ways of God that have never failed upon the Earth.

I give to you the quiet of the hilltop, the vision of the smiling world that opens out below, the green fields that stretch far away until they touch the sky. I give you the path that brings you to the valley, with the trees that rise like silent sentinels to guard the peace of the woodland walks where you may be alone. I give you the thrill of the heights where a man can think no mean thing, and the calm of the hidden places where little children seek and find the key of the Kingdom of Heaven.

The leaping joy of spring, the glittering dance of summer, the rustling of the leaves in autumn, the stillness and strengthening of winter, I give to you. I give to you the ceaseless wonder of the day and night, and the seasons as they pass.

I give you the song that has been in the world since the birds began to sing, the joyous hymn of the lark and the plaintive music of the nightingale; the beauty that has been on Earth since flowers began to peep; the silver lamps that have hung in the sky since the stars began to shine.

I give you understanding of the voices of dumb things—the neigh of the horse that a rider loves, the bark of the dog that has been man's friend throughout the years, and the purring of the cat on the hearth. I give you the music of the day to stir your soul, and the stillness of the night in which you hear, if you listen, the voice of God.

I give you the gentle breeze that kisses the face of a child, and the wind that tosses the ship at sea; I give you tenderness and strength. I give you the charity that comforts the sufferer and the pity that softens the

life of the poor. I give you the wisdom of health and the power to build up in your body a holy temple for your soul. I give you the power to think and know and understand, the power to love books and all beautiful things. I give you the power to win the love of children and the power to hold your head high among men.

I give you the waters of the Earth, with the right to listen to the whisper of the stream as it rises in the hills, to the chatter of the river as it gathers and widens, and to the shout of the cataract as it splashes through the rocks. I give you the beauty of the moving sea when it kisses the Sun, and the vision of the liquid peaks that rise and fall. I give you the slowly creeping waves that have never been still since the seas were made, and the rocks they have ground into golden sands.

I give you the oceans in calm and storm, with the waters that dance in the air, the showers and the winds, the snow that clothes the world anew in a night, the rain that taps on the window, and the rainbow that springs out of the Sun.

I give you, free for ever, with the right to take whom you will, the full enjoyment of the Natural Gallery of everlasting pictures, and the right to see the unveiling of all sunsets, the covering of the heath with red and gold, the floating past of the clouds that ride like mountain peaks across the sky. I give you access to all the bushes laden with berries, to the daffodils and the violet beds, to the place where ferns and mosses hide, and to the tulips when they hang their heads at night.

I give to you the power to remember and the power to forget, and I give you the strength to forgive. I give you the love of the quiet places where the burden of the petty things will fall away. I give you the right to wander

by the brook that babbles o'er the pebbles, to rise early in the morning and see the dew on every buttercup, to lose yourself among the heather and in the field of the cloth of gold.

I give you the Past, with its heritage of good and ill. I give you the Present, with the opportunity that knows no bound. I give you the Future, with the years that never end and know no sorrow.

I give to you the long, long thoughts of youth and the memories of the years; the hope of the dawning life, the dream of the days to be, and the looking-back. I give you the yearning and the craving that make life sweet. I give you the time of waiting and the time of fulfilment. I give you the spirit that good fortune does not mar nor ill fortune break.

I give you the calm that looks out upon the world and will not be discomfited. I give you the heart that does not quail, the courage that does not flinch, the faith that will not fail in the Valley of the Shadow. I give you the power to believe in the everlasting spirit of the world.

I give you the love of true things, the love of pure things, and the companionship of sweet liberty. I give you the scorn of all ignoble things, the hate of all things evil, and the strength to march breast-forward against them until they are destroyed.

I give you the promise that they shall be destroyed, that the face of the Earth shall be fair, that the mind of man shall be free, that all that came from God shall yet return to Him, that little children yet shall see the Dawn that no man knows.

*Out of the depths of space comes the glow that warms
our cheeks and tips the world with gold. A wondrous
journey has the sunshine, across ninety million miles.*

THE LONELY HEAVENS

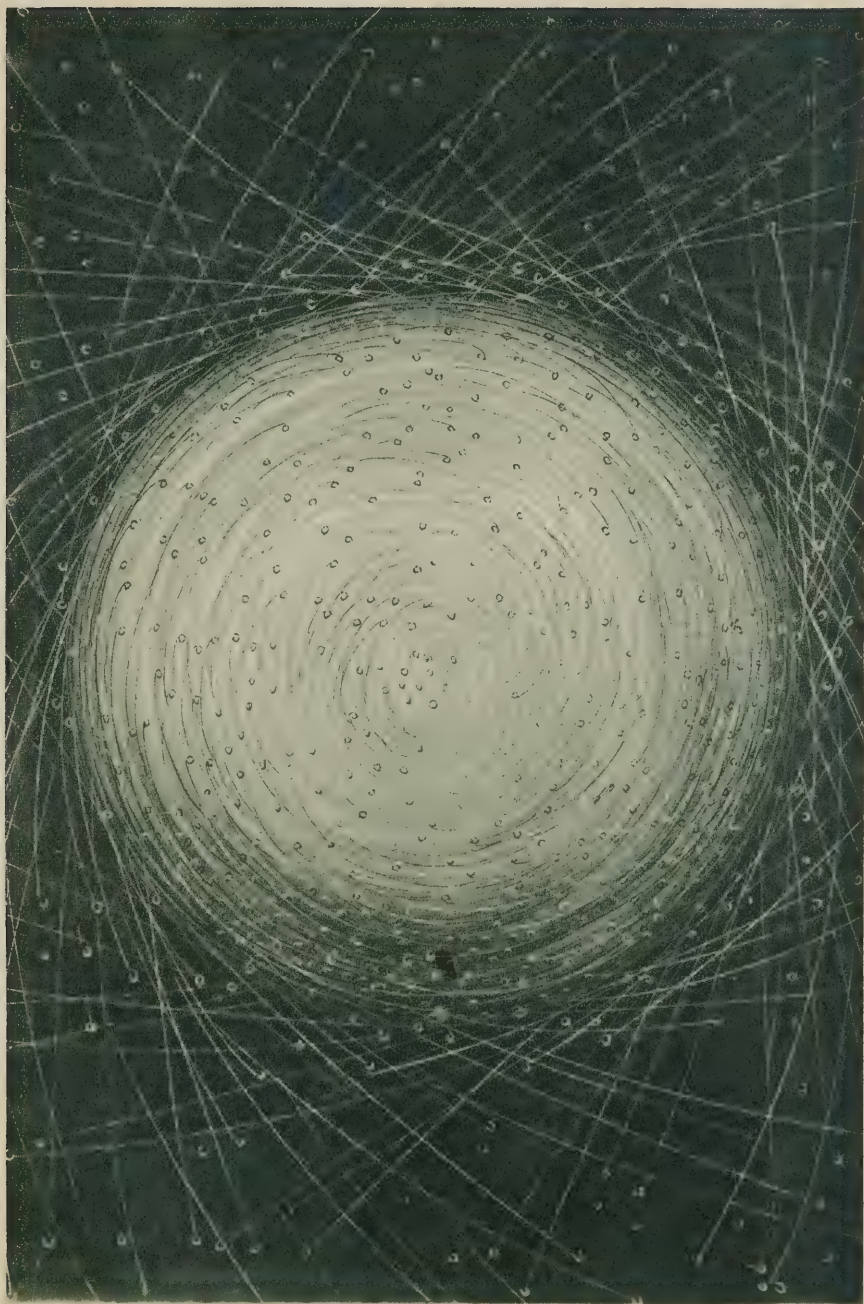
It is beyond the power of the human mind to understand the vastness of the universe. The simple truth about the heavens is beyond the reach of our imagining.

We look up at the stars by night, and the stillness seems wonderful, but we know that the stars are worlds, and that they move through space with a speed unthinkable. One small star among this host is a laggard, creeping through space at eight thousand miles an hour, and attending him is a tiny globe a million times smaller, lit up with the light of the laggard star.

The laggard is the Sun, and the little globe is the Earth.

The Earth sweeps round the Sun in a circle one hundred and eighty million miles across. If the Earth were big enough to fill this circle—instead of being so small that it is almost lost in it—it would need over a million Earths like that to match Orion, a fragment of the Milky Way. The group of stars we call Orion is hundreds of millions of times as big as the Earth; but they are so far back in space from us that we see the stars as dots of light.

Try to let the mind run back to them, and we are lost in the depths of a universe that no man knows. The space the Solar System occupies is said to be a thousand million times greater than the volume of the Sun and all the planets. One of the smallest of the stars is our Sun. It is hardly a hundred million miles away; and to this nearness of the Sun we owe our habitation on this Earth, and the beating of the heart of every living thing.



WHAT AN ATOM MAY BE LIKE—AN ARTIST'S CONCEPTION OF THE MOVEMENT THAT HAS NEVER STOPPED IN ANY SPECK OF MATTER SINCE THE BEGINNING OF TIME



SEVEN WORLDS WE SEE FROM OURS—THE PLANETS

On the left is the Moon, and at the top are Neptune, 2750 million miles from the Sun ;
Uranus, 1000 million miles nearer; and Saturn with its rings, 870 million miles from the Sun



THAT KEEP EARTH COMPANY ROUND THE SUN

At the top is Jupiter, a molten world 483 million miles from the Sun; below are Mars on the left and Venus on the right, and nearer the Earth is Mercury



THE CLOUD OUT OF WHICH WE CAME—FROM SUCH A NEBULA AS THIS NOW SHAPING IN THE
HEAVENS CAME THE EARTH AND ALL THAT THEREIN IS

Draw a circle about the Sun three hundred million million miles round, and how many stars would you find there, keeping the Sun company? In this circle there would be *four other stars*. If a man were living in London and his nearest neighbour were in Tasmania he would probably yearn for company; but compared with the loneliness of our universe a world peopled at that rate would seem crowded like pebbles on the beach. The Solar System in which our Earth revolves is sixteen thousand million miles across; and yet this vast system is a lonely thing, immensely isolated in space, cut off from other groups of worlds more utterly than any two people could possibly be if they were left alone on the Earth.

And all this moving wonder moves to order. It is in complete control. No machine that man has made moves so perfectly, so silently, as this vast company of worlds. A man in 1682 saw a comet pass. He knew it would come back in 1759. The man was dead then, but the comet came back. We do not know where the British Empire will be in the year 2004, but we know where Venus will be in that year, and the day on which she will cross the Sun. We know that the Sun and the Earth are flying to a point near Vega; we know they fly about two hundred thousand miles a day, and will reach their destination in their destined time. It is said that the Sun and the Earth might collide; but our astronomers, the silent watchers of the universe, tell us that the Earth and Sun have travelled thousands of miles an hour for millions of years without an accident, and we are not afraid. These worlds are not blown hither and thither as feathers in the wind. They go the way marked out for them. They obey the Mind that dominates your life and mine.

*The trees sway gently in the breeze, the river glides
past the bottom of the hill, the train down the valley
rushes on to London. How marvellous is this Matter
of which trees and rivers and trains are made.*

THE STUFF THE WORLD IS MADE OF

WE see the river gliding through the hills, the glacier pushing through the mountain slopes, the sunset on the Nile, and the hills ground flat like a sea of sand ; and we think of the countless ages through which matter has been fashioned as we see it now. We see the swaying of a tree in the wind, the full Moon shining over the waters of the North Sea, the daffodils nodding their heads in the sun ; and we think of the poetry and beauty that throb through matter everywhere. We see the whirring wheels of industry, the rushing past of motor cars, the mechanical heart of a ship at sea ; and we marvel at the slaves man has made from matter. But if our eyes could see it as it is, and if our hands could use it as it is, matter would tempt man once again to bow down before it.

In the days when man knew nothing of matter he feared it and worshipped it. In the days when man knows the truth about matter he will want to worship it again.

The world is made up of about eighty-five elements, eighty-five kinds of matter in different forms. We call them gases, liquids, and solids, but we can heat a solid into a liquid, and a liquid into a gas. We can make iron run like water, and make water so hard that a sword will not cut it. We can freeze the air itself, or make it liquid and harness it to our work. We can do endless things with these eighty things that are the alphabet of matter.

It is a long time since men believed that everything on Earth was made of air, land, fire, and water ; but it

is not long since men believed that an atom of matter was one of God's foundation-stones, the thing we could not get beyond. But now we see the very atoms breaking up and beyond them is a world of wonder rivalling the stars themselves. Up in the telescope, down in the microscope, the mind of a man reels as he looks.

For what the mind of man discovers far beyond the atom is something like a little solar system. Think of the Solar System revolving in the broad immensity of space, and think of it revolving in a speck of dust, and there may dawn on you a faint conception of the truth about matter. Inside a thing so small that the microscope will not reveal it at all unless we roll a million million of them into one, is the space in which the everlasting systems of matter revolve.

None of it is still. Every atom in this flying world is flying to and fro. There is not a thing on Earth that is not for ever moving itself. Pick out a letter *o* on this page and look at it, and drop in the middle of it a little bubble of hydrogen. The number of atoms flying about in that bubble is a hundred million millions, and each one passes six thousand million neighbours in a second—in a twinkling of an eye. If atoms were people, and had eyes, one atom in this bubble would see all the population of the world go by *two hundred times a minute*. It is said that no living germ can contain less than a hundred millions of these atoms. A small speck of protoplasm has as many atoms as the Milky Way has stars. The corpuscle in the blood has thousands of millions, and the smallest number that can be weighed in the most sensitive scale is millions of millions.

Such is the atom; but an atom is a giant compared to the electrons that fly about in it, like pin-heads in a

great cathedral. We had better leave these alone if we would keep our sense of words, for it has been reckoned that if a small bulb were pierced with a tiny hole, and these things rushed in at a hundred millions a second, there has not been time enough since the world was made for this bulb to be filled at that rate: yet so incredible is their actual speed that the bulb would fill itself several times over while you read a few of these pages.

So this matter that looks so still is in ceaseless agitation; all matter, if we could see it, is like a thick swarm of bees. It needs little imagination to see that power lies in these moving things, but the extent of the power lying there is beyond the dreams of man. All the steam power ever created, all the physical power of all the horses ever born, would not equal the motive power that lies in this book if men could get it out. Sir Joseph Thomson has declared that there is power in an atom to break a continent in two, and that a fraction of the energy in matter, if set free, would send the Earth back to the nebula. An atom, in breaking up, shoots out electrons at a speed a bullet could only equal with a million barrels of gunpowder behind it, and it has been said that an electron moves as much faster than a cannon-ball as a cannon-ball is faster than a snail.

It is this marvellous power within the invisible atoms of matter that makes up all the wonder of this world. It is these throbbing specks of matter, throbbing in response to laws laid down for suns and storms and oceans and children playing in the fields, that give us light and colour and sound. It is the ceaseless whirl of matter beyond human sight that drives our ships and works our engines, and there is enough power in a few grains of matter to lift the British Fleet over the Alps.

It is not for nothing that every atom moves ; it is not for nothing that all things that we see are in a state of flux. Put a piece of lead and gold together and leave them while you travel round the world. In two or three years you will come back to them and find that the gold has been travelling, too : it has travelled into the lead. Go into the garden and walk among the roses, and actual fragments of the roses you smell will leave their trees and become a part of you.

So matter is ever changing its forms. Every atom of your body, every atom of your house, has been part of something else. The body of imperial Caesar dies and turns to clay. Grains of matter flung into earth flourish and grow, and in time become a canvas for Michael Angelo. Myriads of creatures die in the sea and build up the material of which the Pyramids are made. What is Niagara but the rushing of the waters that have helped perhaps to swell the mighty seas, perhaps to form the shining dew on a field of buttercups, perhaps to moisten the lips of dying men ? What is a forest but the conversion of gases into solids and the building up of invisible matter into a myriad delicate and complicated structures ? What is a garden but a gathering-up of atoms, some from the ends of the Earth, some from the Sun, some from the rivers and the sea, all woven by unseen hands into hollyhocks and daffodils and roses ?

It is a poor mind that can look on these things and not see in them something greater than our dreams. If there is meaning and purpose in the relations between the lives of men, in the delicate balance of forces which preserve the means of life for all, there is meaning and purpose in the sympathy that throbs through vast masses of matter, in the relations between atoms which have

changed the face of Nature from iron and fire and barren rock into gardens and orchards and plains and the cattle on a thousand hills. There is meaning and purpose in the transformation of matter that gives the world its fields of corn; in the revolutions of matter that bring light to us from the Sun; in the vibration of matter that carries your voice to a friend or warns a child of danger; in the boundless ocean of matter that is likely before long to carry light and sound and power and mind wherever men would have them go.

The days of kings' jesters are over, and we need not call these things an accident. Somewhere in the depths of the universe are forces that are for ever renewing their youth. What can be impossible to the Creator and Controller of these boundless worlds? What can be impossible even to man, this lord of the Earth, the conscious instrument of the Mind of God? Atoms of matter form molecules, these molecules select or choose or attract their partners, and their partnerships have made the world what it is. We, too, select or choose or attract our partners. We can choose for ourselves the good or evil side, and so help or hinder the evolution of the world.

He who liberates these forces from the depths of matter, who harnesses these atoms in their eternal revolution, will change the world for every man alive. There will be an end of slavery for ever, an end of needless toil, and the poor will be level with the rich. Who holds this mighty power in leash, waiting to be released? The reins are in the Hand that rules the world. They wait for that great day when man is Lord of Earth indeed, his mind in tune with the Mind of God.

The fountain is playing among the red roses, and the little birds come drinking. We think of all that a drop of water means in the story of the world.

A DROP OF WATER

OF the few substances out of which all the universe is made—so few that a man could carry them all in his pocket—the most important is water. Without it we could not live. It is the most ancient, the most familiar, and the most vital thing with which Life has to deal.

A great tale a drop of water has to tell us, of the ages it has been in the world, of the places it has seen ; but we must pass quickly by a hundred things on a busy day, and the thought that comes today is of the witness of a drop of water to God Himself. For this water of our fountain, in which our little goldfish swim about, in which our jays and finches splash their wings, plays its part in the shaping and controlling of the world.

Inside a drop of water lie properties and powers on which the whole balance of Nature depends. It was not necessary, when water was made, that it should have these powers ; the need for them was not to come for ages yet. But there they were and there they are. When the Earth cooled down and the surface was solid rock, there was water, the best solvent that could be devised to break down rock and form a fruitful soil. When the Sun poured down its heat, there was water, with its marvellous power of equalising temperature. When life began upon the Earth, there was water, moving in its everlasting cycle to keep things sweet and clean. When

man appeared, there was water, the only substance on the Earth that can meet the countless complex needs of the human body.

Of all the available substances on Earth, water alone has such a high specific heat—that is, such a power of resistance to heat—and to this remarkable quality of water the world owes its daily life. It is this unique power of water that helps to maintain the equable temperature of lakes and streams and oceans, that moderates our summers and winters, that creates ocean currents, circulates the winds, and aids the distribution of vapour which brings us rain. No other liquid that could take the place of water has the high specific heat which gives water its remarkable place in life. No other substance that could take the place of water has the remarkable property of water when it freezes, for most things contract when they freeze, while water expands; and but for this our rivers and oceans would freeze into masses of solid ice and never melt. There could be no life as we know it if freezing water acted like most other freezing things. It is water that maintains the equable temperature of the human body. If the specific heat of water were like that of almost any other liquid the temperature of the body, which must be maintained within a few degrees, would vary from a hundred to a hundred and fifty degrees, the complex system of chemistry within the body would be overthrown, and we should perish.

We might look also at the marvellous power of water in relation to the three elements which compose the vital framework of the chemical structure of the world. They are carbon, hydrogen, and oxygen. The power of water in relation to these elements is another of its unique possessions, and the wonder of it is only equalled,

if at all, by the unique power of these three elements themselves in building up the structure of the living world. The world owes its fitness for life to five factors more than anything else—to the presence of volumes of water and carbon dioxide outside the crust of the Earth, and their unique properties; and to carbon, hydrogen, oxygen, and their unique properties. Upon these five factors, upon their relation to each other and to the world, the temple of Life is based.

Professor Henderson, of Harvard University, has shown us that, in the preparation of the great arena of the world, these things made up an extraordinary set of conditions essential and favourable to life. By their independent and united action, he declares, they made Life possible. It is impossible to consider the astonishing relation of these things one to another, the peculiar properties they alone possess, the alliances they form to make an environment for Life, without realising that there was purpose in the building of the house of man.

The great processes that formed the heavens and the Earth were guided to a destined end; the endowment of a few elements with natural sympathies and unique properties carried on the plan; the marvellous chemistry of matter achieved its purposes according to laws laid down; and man came into the world to find his house already furnished, his environment exactly what it should be. After countless ages, man's home was ready for his coming. A wondrous tale, indeed, to come from a fountain playing!

*How sweet is the air in the garden, bearing
the fragrance of the flowers, rushing through the
aerial gateway of our bodies to send a new
stream of life through our veins.*

A BREATH OF FRESH AIR

LET us think for a minute or two of the wonder of every breath we take.

Every moment of our lives our bodies are being poisoned, yet the span of a man's life is three score years and ten. All through these years a breath of fresh air stands between us and the grave.

It is not surprising that this simple act of breathing is governed and protected by the most amazing living machinery that is to be found in the human body. Every breath we take is moistened and warmed and filtered before it reaches the lungs, which send it on its journey through our system. Millions of elastic fibres are stretched every time we breathe, in order to protect us from dust, though there are still silly people who breathe through the mouth and lose the value of this wonderful safeguard.

We walk out in the country, drinking in the glorious air of this fine morning, and in a minute we have filled our lungs with a fresh supply of the very source of life; and from the lungs the fresh air pours itself into the stream of blood that flows for ever past its walls.

To understand what happens now to our breath of country air we must explore for a moment this wonderful river of life, as full of living things as the sea, ever flowing between thousands of miles of walls that hem it in and keep it on its way, constantly changing its composition to suit the different territories through which it passes,

carrying in fresh air and taking out bad, conducting water all over the system, taking food where it is needed, and bearing along its course a ceaseless patrol of watchmen and police.

A chemist will tell you that no laboratory in the world has ever yet found anything else so remarkable as a drop of blood. The blood that oozes from your finger when you prick it with a needle brings out with it millions of lives. The complete history of that drop of blood would fill all the volumes of the Children's Encyclopedia, and what we know of it is almost nothing compared with what we do not know. We know something of three of its inhabitants, because they are familiar gases; we know nothing at all of one other inhabitant—the little blood-plates that crowd together in their millions. But about two inhabitants of this drop of blood we know enough to make up a story stranger than any fiction. They are the red cells and the white cells of the blood, and in the drop of blood that comes from a pin-prick there are three times as many of these marvellous creatures living and working as there are people now upon the Earth.

It is the little red cells that take up our breath of country air and carry it on its way, and the wonderful thing the red cell carries with it has the strange name of haemoglobin. It has baffled and bewildered every chemist who ever tried to understand it. The smallest bit of it that can exist is made of a thousand atoms, and one of these atoms is iron, which gives the colour to your face.

So that the smallest visible thing that this red-cell porter carries has a thousand parcels to carry with it, and iron, which gives a little girl her rosy cheeks, is only one of them. Another is oxygen, which the red cell

picks up from our breath of country air. Every minute every red cell in your body calls at the lungs for oxygen ; in its life, lasting probably a fortnight, it is filled about twenty thousand times with fresh air, which is poured into the remotest tissues of the body. If we imagine a city in darkness, and a switch suddenly turned on to fill it with light, illumining its slums and cellars and palaces, shining on its turrets and towers, penetrating its secret chambers, and flooding its public places, we can imagine what the red cell is doing at this moment with the last breath of life we drew into our lungs.

That is the everyday work of the red cell. What does his white friend do ? The white cells are the police of the body, ever watchful for invaders, creeping through the walls of blood-vessels after enemies and devouring them. They are a navy in the blood, and if the enemy leaves the sea they instantly become an army and follow him on land, pursuing him ceaselessly till he is conquered or they themselves are dead. They come together as an incredible host wherever they are wanted. They are the noblest army upon the Earth, guarding the lives of all mankind, never failing in their duty however great the odds may be against them, protecting alike the lives of murderers and little children.

Remember what it is that happens when you prick your finger. The blood that was running the moment before is built up into a solid wall. The marvel of marvels in the blood is this element which has the great business of making the blood solid if it threatens to escape. An almost incredible thing that is in itself, but even more incredible is the fact that the substance which solidifies the blood is made in an instant when it is wanted, and does not exist at any other time.

The same thing happens with red cells. The ordinary red cell has no nucleus, because it is only a carrier, and a nucleus needs room and food, and Nature does not waste these things. But let the body suddenly lose a great number of red cells, and be in desperate need of more, and instantly the young red cell with a nucleus appears, and the red marrow of the bones builds up red cells at the rate of over a hundred millions in a minute, until they have restored the proper balance in the blood and filled up the gap. How does the red bone-marrow know when they are wanted, and make them so quickly then, though never at any other time? It is one of ten thousand questions about the body that no man can answer.

A man's blood, my doctor tells me, is as personal as his face. It is impressive to think of this river of life, running through fifty thousand miles of living tubes within our bodies; picking up one substance here and another there; carrying new strength to the remotest corners of our system; coming with a special rush to a man's brain if he happens to be thinking hard; ventilating the millions of parts of our bodies; carrying off the poisons our bodies are making every minute; keeping life within us ever fresh and sweet; and bearing along its course, not only the materials for building up the body anew, but a whole host of architects and builders and sculptors who repair the body as it wears away.

We should think it silly if a novelist were to write a story of a motor-car whose wheels, as they went round, poured into the car a constant stream of metal which repaired the parts as they wore away; yet every breath you draw does what such wheels would do.

A good thing, truly, is a breath of fresh air; let us keep our window open for it.

*Hard it is to leave the garden on a day like this,
one of Wordsworth's heavenly days that cannot die.
For a man in his garden is a King of the Earth.*

FIVE ACRES OF ENGLAND

HE who has a garden has the most precious thing in the world. He has a kingdom of living creatures greater in number than the people of an empire.

He has a picture-gallery, if his garden is lovingly tended, more beautiful than any that Paris or Florence can boast. He has a theatre, if he will take the trouble to look at the play, with a drama more thrilling than any that Shakespeare could write. He has a workshop where the greatest industrial army in the world works unceasingly from hour to hour and age to age. He has a cinematograph in which the scenes are ever moving, ever changing, ever enthralling those who look. He has a laboratory in which the problems that are solved every minute astonish all the universities on Earth. He has a museum in which can be seen the whole working of Evolution as far as we know it. He has a book in which the history of the Earth and the story of life are written with authority. He has probably in his possession, if he can learn the way to turn it, the key that will unlock nearly all the mysteries that puzzle the brains of men.

He has before him constantly the greatest living host of patriots that have ever served a noble cause. He has an instrument that baffles all inventors, for he has power without a power-house, heat without a furnace, light without a dynamo. He is lord of the forces of the Earth. He belts his wheels to an axle through the

Sun. He laughs at distance and at time, for his helpers come millions of miles in a day, and forces that no man can number have worked for him for millions of years.

My garden has been whirling through space for more ages than man can count. Today it is the surface of what we call our solid Earth ; in some far-back yesterday it may have been a mountain down below the sea ; and who can say where it will be in some far-off tomorrow ?

Perhaps it may have been flung up by some volcano out of the depths of the Earth. Perhaps it may have been ground down from the turret of a mountain-top, ground into powder so fine that a million grains together can only just be seen without a microscope, so fine that a grain for every human being on Earth could be pressed into a thimble. Perhaps it may have been blown across the world, little specks more precious than gold riding on the wind. One thing certainly I know : I can pick up a little stick and push it down into the ground an inch or two, and touch with it the root of this lovely rose where it lies fast in what was once an ocean-bed. I can lie in the boat on my little lake and know that here, in this very place, swam the fishes of the sea. I can look down on the river flowing by the bottom of the hill and know that once it ran where I now stand, where the roses are blooming higher than the steeple of the village church.

I look up at the Sun by day and know that once my garden was fire like that. I look up at the Moon by night and know that once my garden was part of that. Out of fire and wind and water came this garden of roses, these green and lovely lawns.

But only the hills and the lanes and the old, old trees know all that might be written of this place that seems so still ; and, as for us, we know that for thousands of

years around this spot children have played, and men and women have worked; the young have grown old, and the old have grown tired, and the tired have lain down to rest; and all the joys and sorrows that come into this world have gathered here.

So that the air of a quiet garden is laden with the memories of the human race, and none who really feel the throb of life can think a garden dead. The truth is that a country garden is as much alive as a town itself. We do our work with so much noise that we are too ready to believe that silence means idleness and stillness is death. But in the stillness of this garden is going on, for ever, such a volume of work as no factory can rival. If all the work in a garden could be done by men, or by machinery made by men, how wonderful it would seem to us! What a crowd of people would be moving about! What clanging of wheels, and swishing of belts, and hissing of fires, and belching of smoke! Every rose would cost a shilling and every foxglove half-a-crown, and they would be kept in glass cases and put in shop windows; and such a fuss there would be, and so much talk, about the clever men and the wonderful machines that make a garden grow.

But it is not at all less wonderful because it is done in silence, the workers are not less splendid because they work unseen, never failing, never grumbling, never asking for more wages—or, indeed, for any wages at all.

As I sit writing this among the flowers a strange noise breaks on the garden. A man is flying from Paris to London, waking half the sleeping things along the way. It is marvellous that a man should fly, but why must he make such a noise? Every day a thousand birds fly past and nobody hears, but a man goes up and



THE EVERLASTING RIGHTS OF THE POOR—THE GLORY OF THE WOODS IN BLUEBELL TIME.

startles a town. One lesson at least a garden teaches us—the lesson of quiet power.

That is one wonder of a garden, but above it and beyond it is this greater wonder still—that this power, working wherever we look, wherever we go, is working by design. Nothing in this garden of a million things comes here by chance. A seed drops from the foot of a bird and sinks into the earth. The seed bursts, a root forms, and little shoots push out. There is the power of a dynamo in that seed, building up the plant, pushing it on its way to the sun, so that at last, escaping from its dark prison-house, it reaches the light and climbs up towards the sky. Its great stalk strengthens as it grows, and throws out lesser stalks. It weaves lovely patterns of delicate lace and covers them with green like silk, and slowly a huge ball grows, soft at first, then hard, then packed to bursting point. The dew moistens it, the wind blows it, the sun warms it, and lo! the ball bursts open, huge red leaves unfold, and a scarlet poppy has come into the world. It is in every part perfect, and down in the heart of it, safely guarded from harm, is an instrument with power to make a hundred poppies like this one, so that when this fades, and its leaves fall, its place is taken by another ball, packed tight with seeds until it also bursts, flinging its seeds out on the wind.

So, if there were nothing to check it, the whole world might be filled with scarlet poppies, so inexhaustible is the power of the earth and the life of this beautiful thing.

We may ask a thousand questions about it all, and there is no answer to them that does not lead us to ask more. We look out upon a garden in the early morning, and not a leaf is rustling, and we think it wonderfully still. But it is not still. It is never still. Under it

everywhere the eternal powers are working, pushing life ever upward and upward, so that the eye of the kinematograph can see the movement, and can pick it up and throw it on a screen, until the unseen throbbing of a garden looks something like a forest in a gale.

We must change our ideas about things if we have thought of a garden coming up by chance. A garden is designed no less than a ship. It is not more true to say that there is mind and law and order in the Mauretania than to say there is mind and law and order in a garden. Not by any mischance could a scarlet poppy seed become a rose. Not by any mischance could a rose-tree meant for climbing become a dwarf. We pluck any one of a thousand flowers, and know exactly the scent that it will have. We put in the ground any one of a thousand seeds, and know exactly what it will give us, and when it will come. We know the colour it will be, and how high it will climb. We rely upon it all much more surely than upon the work of our own hands.

No mechanical law is known which can explain the things that happen in my five acres of our Island. It is probably true to say that every man and woman and child who lives in the world could come into this garden and take away a different thing and not leave the garden bare; and every one of these different things—akin but never quite alike—has such mystery and wonder of its own, such evidence of a designing hand, such skill of craftsmanship, such delicate beauty or such astonishing strength, such points or curves, such rods or balls, such intricate fashionings, such graceful hangings, such jewels in rich caskets, such hidden depths, such colour and glow, that he must believe in nothing at all who believes that these things happened without a mind.

There are those who would say that a flower itself has some marvellous possession which can only be compared with mind. A plant drinks in the light with its thousand eyes, and it is said that these eyes can *see*; that, though they may not *know* they see, an image appearing before them is reflected in the eye of the plant as an image is reflected in your eye and mine.

And what is it, if there is no mind, that sends a flower in search of light and air and water, and a root in search of soil? Watch the stately tulip at night, as the sun withdraws its warmth, and see it draw its orange coverlet round its children. One after the other the leaves close up, like windows shut by some invisible hand, and the wondrous thing inside, the delicate budding life that is to be a tulip in another summer, is wrapped up from the cold. Who shuts these windows? Who knows the time? Who folds up the poppies at sunset? Who opens them at dawn? Who, when we prick an apple, sets a thousand tiny cells to work, like a thousand tiny doctors, to heal the wound again? Who taught the hollyhock to set a broken limb? Who gave the worm the sense to line his house with leaves?

The wise will never say that in all this wonder of a garden there is no guiding hand. The quivering energy in the earth that all through spring is making summer, and all through autumn is laying up stores for spring; the vital hidden forces in the earth that never yet have failed to bring the glow of summer after winter's cold—is there no hand that makes it sure? This yearning of life to be let loose from the earth, this quivering and stupendous host of new-created things beneath our feet, this kingdom of wonder drawn by the Sun out of specks hidden in darkness, is as great a marvel as the flashing

of the human voice across the sea ; but it happens everywhere and always, and it costs us nothing, and so we think it nothing. And yet what is coming up towards us, emerging from a host of little things that look so much the same if we could see them down below, is a pageant of glorious life and colour, more beautiful to look upon than anything that man has ever made.

Some will be bluebells, or roses, or tulips, or wallflowers. Some will climb and creep, and make a purple wall of beautiful convolvulus. Some will line a border with sweet alyssum. Some will be so sweet that we can hardly leave it, some so bitter that we can hardly bear it. Some will bloom in heat, and some in cold. Some will live a day, and some a hundred days. Some will climb up poles and over pergolas. Some will lie modestly down by the path, and some will hold their heads up proudly and crane their necks to the sun. Some will seem too pure to live in a world of sin, and some too slender to bear the rain. Some will put forth strength like a man, as does the bush in my garden which has a thousand roses out at once, and thousands more to come.

And some of them will grow beyond belief, with parts as complex as a watch and as many as a ship. An engineer would tell us, as if he were saying a marvellous thing, that a motor-car has ten thousand parts, but my gardener planted not long ago a blue delphinium, and it hangs today with ten thousand little bells. Outside my window stands a veronica shrub, and the wind just now has swept it and strewn the ground beneath with twice ten thousand blooms, but they are hardly missed from this one shrub, for its root has thrown up a hundred stout branches, the branches have thrown out thousands of stems, the stems have struck off more tips than could

be counted, and at the end of each tip is a mass of lovely flowers, so packed together that there is no English city except London which has as great a population as my nine veronicas. We talk of the wonders of machines, and of what we can do by touching a spring; but no machine, though it should make all the noise on Earth, could make a little cactus with a thousand spikes, or draw out from this cactus a long stalk, and from this stalk a bloom so dazzling that it draws all eyes to it for a day, and dies suddenly away.

It is a pity we should forget the hidden wonder of familiar things. A cedar in the garden—so slender that every branch of it sways in the wind, so graceful that it stirs the love of beauty in all who pass it by—has *a hundred miles of growth* in it, a hundred miles of living material, built up as a machine is built up, part by part and piece by piece, so that this tree could be taken to pieces, and its parts laid end to end until they reached from its roots to the sea fifty miles away, and back again. So astounding is the power that lies in the earth, so enthralling is the wonder of these things!

Who makes them all? Who gives the root of a single rose the power to send out a thousand yards of wood, bearing a thousand lovely flowers and fifty times a thousand leaves? What power is it that pumps up the sap of a tree to the height of the trunk, to the end of every branch, and to the point of every leaf? What is it that gives a tree the power to pump up water higher than any vacuum pump can do, and to carry this water through mile after mile of wood, springing from a single root? What is it in a nut that makes oil which will light a lamp or drive an engine?

Who made the machinery by which a plant can

generate heat, so that the inside of a snowdrop bell is warmer than the air outside? Men need terrific energy to manufacture heat, and they do it with great noise and cost. But the tulip and the foxglove make it quietly as we look at them, and nobody thinks them clever or industrious. And how many people really think of them as if they were alive?

Yet how busy all the time the garden is! Every leaf is breathing; you can see that at once if you put a laurel leaf in water and watch the bubbles of gas that it makes. Every plant is growing; you can *hear* the growth if you will stoop down low and listen to the pampas grass, bursting into fullness of life. Every shrub is putting on new tips, every tree is looking at its best. The lawns are fresh and green, the orchard is filling up, the birds are in the heyday of their song.

And beyond the flowers and shrubs, away from the rose-walks and pergolas and herbaceous borders, the kitchen garden is like a workshop at full time, a workshop producing things more precious than rubies and dearer than gold. Everybody knows that this is so, but how rarely we admit it, although the truth is that all the gold that has ever been dug out of the earth would not buy one year's harvest of the gardens of the world. And if that harvest should once fail—if the Sun should shine in vain, and the rain should fall in vain, and the winds should blow in vain; if the busy multitude of little creatures that feed the roots should strike, as men so often do; if they should rest from their labours, as men quite rightly do; and if the birds that silly people shoot should leave our gardens altogether, and the worms we tread upon and kill should pay us out by ploughing the earth no more—then all the gold that is found in Africa, and all

the diamonds too, would be rubbish-heaps, for there would be no people, and men would have learned too late the wise words of John Ruskin that there is no wealth but Life.

Quiet as this garden is, it is busier and more active than a shipping yard. There are more worms in my five acres than there are school-children in London, and they lift in a year a weight of earth as great as the weight of the coal that feeds the furnace that keeps the greenhouses warm through winter. There are more living things in my garden, things that move from place to place, things that creep and fly and do good and evil as men do, than there are people in England; and the busiest man is not so busy as most of these creatures are.

The garden on my Kent hilltop, where I can sit and hear nothing but the buzzing of a bee or the singing of a bird, is made for me by the energies of a population so vast that we cannot conceive it, and by the working of natural laws and forces that we cannot understand. They put into a tree such power that it will force up tons of earth, will break great stones, twist railings, and hold iron bars fast in their grip. They put into a sprig of ivy the power to grow and grow till it builds up a wall or covers a house, bursting timber, creeping through mortar, clinging and thriving wherever it goes. They store over my garden ten million pounds' worth of nitrogen, and feed the garden with it. They bring up from the sea, along a highway through the clouds, one hundred tons of water-drops to fall on my garden in a night.

Nor are these all the forces that bear upon my garden. These armies that work unseen, these natural powers that never fail, are reinforced by the work of a host of men who have never seen these flowers, and never will; for unless miners went down into the earth to get coal,

unless men spent their lives in laboratories studying chemistry, unless men worked with hand and brain in a hundred places in a hundred ways, a garden could not be. Even without an engine-driver the garden could not be, for a man must be at his engine miles away so that water may come from a tap when a rose is parched.

All the ages, all the elements, almost all the workers, meet on my hilltop, and they make up a glory that comes and passes often in an hour, so that as we think of the ever-changing garden we understand those lines of Emerson :

Go thou to thy learned task,
I stay with the flowers of spring :
Do thou of the ages ask
What me the hours will bring.

The ages of the world bring me my lovely hour in June. This hour in June, that has come to us through the ages, this hour that is millions of years old and has been on its way since the first hour of Time, what does it give to us ? It must give to us, surely, a new love of the world, a new zest for the life we hold in trust, a new resolve that these golden days shall be wisely used, and shall not slip from us carrying nothing with them for the years to come.

As a seed sends out its power into the world, so even do you and I. Ever and ever we go on, not less surely than these unseen armies that build up a rose, the ever-working servants of the Creator and Controller of the world. We can count the apples on one tree, but we can never count the trees in one apple. The seeds of our lives are scattered wide and far, and none can follow them, none can see the fruit. But the power that makes a violet grow will seek it and find it and garner it and gather it, and its fruit will be reaped in due season.



THE LOVELINESS OF A COUNTRY DAY—FROM THE PAINTING BY ARTHUR H. BUCKLAND



Snowdrop



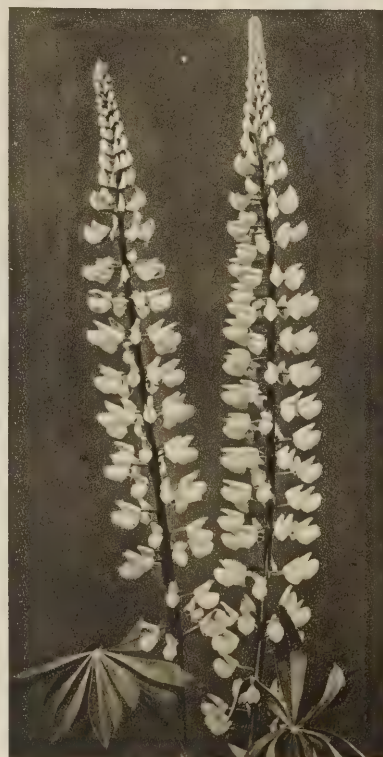
Aster



Lily-of-the-Valley



Viola



Lupin



Narcissus

THE GLORY OF THE FLOWERS

Yet, miraculous as a garden is, incredible as is the power of a seed, or the bursting of a flower, or the colour of a rose, the wonder beyond all compare is this—that we stand in the garden conscious of it all.

WE STAND AT THE GATE OF THE UNIVERSE

As nothing is the glory of the universe compared with the wonder and the glory of a human life.

Two things filled the mind of Kant with awe—the stars in the sky and the sense of duty in man. There is a third thing that should fill us all with awe—the thought of ourselves, the thought of a speck of dust grown into a human being, climbing up to the throne of God.

Surely that is the most dramatic spectacle that can be conceived within the boundless universe. The thought that these rolling worlds are made for you and me, serving our purposes and feeding our desires, is something to make us pause. We think of the wonder of the Earth about us and the sky above us, of worlds that roll through space around a thousand million suns, of the Sun by day and the stars by night, of the glory of the flowers of the field, of the majesty of the mountain peak, of the fearful grandeur of the rolling sea ; and well may we think of these things, and be awed by them all, from morning till noon, and from noon till night.

Yet in all this universe of glory, in all this mystery and majesty that fills creation from the heights above the Sun to the depths below the sea, one thing soars above all else. One thing crowns the Earth and justifies the travail of the ages ; and that one thing is—You.

We think of ourselves as ten, or twenty, or thirty years old, yet for us the beginning lies farther back than we

can think, and the chain in which we are a link comes down at this moment from the very beginning of Time. No accident is it that you and I are where we are; in the great adventure of the universe we make up a chapter that *must* be written, and who shall say that God Himself, who set the worlds in space and planted in them the seed from which we grew, can do without us?

If, in these astonishing days, there should fall from the hand of some inventor a kinematograph of Time, a sort of telescope through which we could look and see the story of the countless ages past, we should see a spectacle unfold beyond our own power to believe. The mind of a man is the most astonishing thing in the modern world, but the story of the rise of man is a thing before which a man's mind staggers and reels.

If a speck of steel were to fly off from the printing machine on to this paper, and were to move about until it became the Mauretania, that would be less wonderful than the making of a man. Or if you should touch a piece of wood and a speck should fly out and make itself an easel, and if there should grow out of the easel a canvas, and if the colour of this speck of wood should dissolve itself, and spread itself, and break up into other colours until it produced upon the canvas the unmatched glory of Raphael's Madonna, that would be simplicity itself compared with the miracle which took an invisible speck and out of it made you—you with your strength and weakness, you with the light of the Sun in your eyes, you with the love of a mother in your heart.

Out of the mists of time, by unimaginable ways, through ages of mystery and at last through a brief span of darkness, we come into this world. Our journey through the universe is begun.

*An old, old history is ours as we stand here,
looking out on the morning an hour or two
old. Strangely we came into this world. By
what dark ways! Along what winding paths!*

THE DRAMATIC RISE OF MAN

MAN, says Sir Arthur Keith, perhaps the greatest authority now living, is probably six million years old : that is to say, the gulf of time that stretched from the birth of man to the Crucifixion was three thousand times as long as the time from the Crucifixion till now. But the little we know of the history of man in these six million years is crowded into one six-hundredth part ; we know very little about the life of man beyond ten thousand years ago.

The written history of mankind is like the story of a traveller round the world who has forgotten everything that happened except on the return journey from Dover to London. It is like a summer's day in the unwritten annals of Time, with Moses on Mount Sinai in the morning, Paul at Athens in the afternoon, and Shakespeare writing Hamlet in the evening. In eternal Time the diary of the human race is one day old.

Yet man has done incalculable things within this narrow space of human history ; he did incalculable things before his history began. It was not for nothing that Mind set its holy temple within his physical frame : the power that was to work through man to make the world what it is first set man in authority above all other creatures. So far man had been four-footed with the beasts ; he had lived in trees and caves to protect himself

against the lion and the bear ; but the greatest transformation ever known was now to come, for the lowly tenant of trees and caves set himself on his feet. This creature, made to creep and crawl and climb, forced himself erect and walked : he stood upright like a man.

Science has no doubt that man came down from the trees, set himself erect, adapted his body to situations and environments for which Nature had not made it, and, walking the Earth on two feet, made himself its overlord by the power of his hands.

It was the first of the three great steps in the dramatic rise of Man.

Now he was king indeed. Alone upon the Earth he could pick up a stone and throw it, and the throwing of a stone was the beginning of civilisation. Man is what he is through the warfare of peace ; his powers have grown by using them. He had come into the world built on the plan of all creatures of his kind, but with something wonderful and strange within him ; the choice of his brain as the throne of Mind on the Earth had raised him on high. Nature made him one thing ; he made himself another. He has set himself up, though his feet were not made for walking.

One thing that happened now must be ranked among the most dramatic factors in the rise of man. Man could stand erect and throw a stone and use a tool, and when he arrived at this great stage Life had his weapons waiting. Roughed out for him in the ocean bed, he found them ready to his hand as the sea moved into its new basins ; he took them, and split them, and rubbed them, and shaped them, and the man of the Stone Age was here, with axe-heads and arrow-heads and hammers, with saws and borers and sharp blades and all that variety of tools

with which he laid down the beginning of the world in which a man was king.

There is not much poetry in a flint as it lies on your garden path, but down in the sea these flints were hardened from dissolving bodies of tiny creatures, the sea changed places with the earth and left them on dry land, and there *man found them when he stood erect*, the very things he needed then, the tools with which he was to win supremacy over his ancient foes, the actual foundation-stones of human progress. Man took these flints, split them and shaped them, and made them tools and weapons. They were his hammers and axes and knives, his borers and piercers and swords, his instruments of progress, his weapons of defence, his capital. He could throw a stone, and could use a tool.

It was the second of the three great steps in the dramatic rise of Man.

So the worker arrived in the Stone Age workshop, standing at the dawn of Industry. But he stood there greater than he knew, for with him he brought a weapon mightier than the flints he had fashioned into tools. We do not know for certain, but it is likely that when Man set himself erect he gave himself not only the power of using tools, but the power of speech as well. Now, at any rate, and by whatever means, Man stood erect; he learned to use a tool; *and he could speak.*

Science has no more amazing tale to tell than the tale of how a fish leapt out of the sea and became a man, and in all that wondrous story is nothing to compare with the building up of human speech. The mechanism of the voice can be traced back to a fish of countless ages past as clearly as we trace the Mauretania back to a primitive craft—and just as clearly do we trace through it

all the working of a mighty Mind, the purpose ever moving on, the power invincible that sees the end in the beginning and does not fail. The air-bladder of the fish has become the lungs of a man, the gills of the fish have grown into the larynx, the arches of the gills have become the chain of bones within the ear ; and so, by ways beyond our understanding, Life has crept upward, and the organs of a lowly creature swimming in the ocean depths have been transformed into the music of children and the song of the lark at Heaven's gate. Now the man who stood erect, the man with his hands, had found his tongue.

He had taken the third great step on his way to the Throne of the Earth.

What unthinkable spaces of time elapsed from step to step, by what amazing processes these transformations came about, we cannot tell ; but without these three new powers in man the world we know could not have been. It is the man who can walk erect about the world, using his hands to move and make things and his tongue to make his wants and wishes known, who has raised the world above the moral level of the jungle, and made it a habitable and happy place for human beings.

*And yet what shall we say of our place on Earth?
Like a speck in the universe is Earth, like ants on a
globe are we. We are but little men on a speck of dust.
Yet how fearfully and wonderfully are we made!*

WHO ARE WE ?

WELL may we wonder who we are. A year or two before the Great Shadow fell upon the world I stood with a little group of famous men in a wooden shed in the middle of a field in the pleasant land of France. Beside me stood a man who has been Prime Minister of England. The next day came a Cabinet Minister from Paris ; a few days after came a king. What came they out to see ? What could there be, in a wooden shed in the middle of a field in France, to bring there a Prime Minister from England and a king from Spain ? They came to see a bicycle-maker from Ohio, who came out of his shed and flew up into the sky like a bird.

Here, surely, I thought was the wonder of the world. Here, surely, was a thing for Time itself to wonder at. But so, too, must the Egyptians have thought, six thousand years ago, when they raised the Great Pyramid from the sands ; so, too, must the Queen of Sheba have thought when she beheld the splendour of Solomon ; so, too, must a child think when for the first time he sees a red rose ; so, in all ages and in all places, must men have thought ten thousand times.

For the truth is that nothing is so common as wonder. We begin to wonder with the opening of our eyes ; we wonder till the light shines in our eyes no more. The kingdom of wonder is the widest of all the realms upon the Earth. It has no known bounds. From the depths

of the oceans to the utmost heights of space, from the dust we trample underfoot to the sunset in the heavens, extends this boundless realm. There is nothing we know that lies outside it—a stone lying in the road, a bird flying in the sky, a wheel going round, the whistle of the wind, a watch measuring the movements of the Earth, a child singing its song.

Nothing is commonplace. Men spend their lives in studying such questions as why, when we lift up one end of a stick, the other end comes up too ; for no man knows that. One of the greatest mysteries in the world is the way in which things hold together. We can measure the distance of the stars, but no man can explain why our houses do not fall upon our heads.

It is nothing to say that the mortar holds the bricks together and that the wood and the ironwork are nailed down, for every tiny atom of the brick and wood and iron is made up of countless hosts of smaller atoms that are never still, but fly about for ever, so fast that they could cross the Earth in a single second, and so far from one another that, in proportion to its size, each has as much space to move in as the Earth itself. So that the very foundations of our houses are flying about at a speed that we cannot think of, and are flying about, too, in a world that is itself for ever flying, that has never for one moment been still since it was fashioned from a cloud of fire.

But we need not lose ourselves in this great mystery. The wonder of the world is beyond the imagination of mortals to conceive, and we will try to keep our heads clear on a plane that the mind of a child can grasp. Let us sit down as little children in the presence of the great mystery of life.

Most of us live three lives. We live in the past, which made the present ; we live over and over again through the childhood that passes all too soon. We live in the present, which is making the future ; we live far too much, perhaps, in the fleeting hour that is with us. And we live in the future, in which all our hopes and sorrows lie ; many of us live too much of our lives, some of us too little, in the time that lies ahead. So, like our own lives, the life of the world divides into three. There is the wonder of the past—Who are we ? Where did we come from ? There is the wonder of the present—What are we doing here ? And there is the wonder of the future—Where are we going ?

Who are we ? In a wild moment of a summer's day I conceived a scheme for telling the children of our English-speaking world all that they want to know, and I have heard of a little boy who, on getting his first copy of the *Children's Encyclopedia*, said to his grandmother : " Now, granny, I shall really find out where I came from ! " I am afraid the *Children's Encyclopedia* will not tell him. All that we can say is that he is a little man on a speck of dust.

We have seen an ant at work on a little ball of earth, and in the physical universe the human race is like that. If we can imagine ourselves standing on some majestic mountain peak far away in space, with omnipotence in our hand and the vision of all creation in our eyes, the Earth would pass in front of us like a flicker of a star. In the vastness of the universe the Earth is no more than that ; it would seem to us, as this wondrous sight passed by, one of the feeblest of a thousand million stars.

We know that, farther back in time than we can think, the Earth was once a cloud of fire, a red-hot,

shapeless mass. The stuff that we are made of was in that cloud, whirling through the vastness of space. As the fire-cloud spun through space it cooled and shrank, showers of red-hot rain and tides of red-hot lava pouring over it, and so, through ages that no man can number, a fiery cloud became a globe of gas ; the globe of gas cooled down outside, the stuff that made it shrank into itself, and out of it, in various wondrous ways, came what we call our Earth, with the air, the sea, and all that therein is.

Nor is this strange story ended, for the changes go on still. The Earth is still being made today, not less than when the twistings in the red-hot globe were forming the beds of the seas. Nothing is still ; all things move with time and tide. The mountains are crumbling into dust, the ocean depths rise slowly from the sea, the very flesh and bone that build up our bodies change like the leaves of trees, and it is true to say that you will not see in your glass tonight the face you saw there a few years since. Tennyson's poem is as true in science as in poetry :

There rolls the deep where grew the tree.

O Earth, what changes hast thou seen !

There, where the long street roars, hath been
The stillness of the central sea.

The hills are shadows, and they flow

From form to form, and nothing stands ;

They melt like mist, the solid lands—

Like clouds they shape themselves and go.

So out of a cloud came the Earth, a lifeless globe, spinning through the heavens. Not one thing was breathing yet. How did the globe become alive ?

Science has no answer to that great question. The mind of man, which has searched the depths of oceans

and reached beyond the clouds, bows down in awe before the thought of its own beginning. Imagination reels before the picture of this Earth of ours, whirling through space like a stone that a boy has thrown, empty and dead and bare, with not a living thing upon it ; and yet, so past all understanding is the wonder of this world, in such a perfect order has the Earth evolved from a cloud of fire, that the eye of science sees it step by step, and age by age, and the pen of science writes its story as clearly and as confidently as a historian can write of many things that happened only yesterday.

Professor Tyndall could conceive the eye of scientific faith gazing on the fire-mist millions of years ago, and seeing in the mist the slowly-shaping Earth, the slowly-forming seas, the mountains flung up from the depths of oceans, the rivers carving their way from the hills, the birth of the first living thing in the waters ; life coming ashore, the strange growth of monstrous animals and birds and flying dragons, and at last the coming of man, a puny thing to look at, a speck to be gobbled up by a mastodon, yet with something about him that conquered all creation, and raised on the stage of this bare Earth a spectacle that surely angels themselves must stand and gaze upon.

All that, Professor Tyndall believed, could have been foreseen in the cloud of fire by the eye of scientific faith ; and what he meant was that the development of the Earth and the birth of mankind have come about by ordered steps, so perfect, so logical, so clearly following the line of cause and effect, that it was all inevitable, that it was all bound to happen from the beginning.

We must pass over the wonder of the long steps by which the Earth became the home of man and Life

came into it ; but bring into your mind this thought—that once upon a time there was not a single living thing on the land or in the sea ; no life had been created yet in all the universe.

Then there came into the world, let us say—we are almost sure it was in the sea—a living speck, a thing perhaps so small that no eye could see it if even there had been an eye to look ; and from that speck has come the living world—the lion and the lamb, the eagle and the nightingale, Shakespeare and Milton, and you and me.

That may seem an incredible thing to say ; but it is not more incredible than the life of any one of us. For what is a human being ?

We begin with a single cell, a thing so small that millions could lie on a penny. Here, surely, must be the very beginning of things ; surely there can be nothing farther back than this ? But that invisible cell has a history beside which the history of the human race is as the twinkling of an eye. This cell has within it a marvellous system which has been compared with the inside of an ocean liner ; and this single cell, with all the potentiality of life within it, divides into two ; and as it divides it gives *to each part of itself* the whole of its power of dividing and developing. It is as if your watch had the power to divide itself into two watches, each complete, and as if these two watches then made four, and these four made eight, and so the multiplication went on until the watches had become greater in number than all the watches now in the world.

Such is the amazing process awaiting the living cell which is to become a rose, a fish, a tiger, or a man ; for any one of these, any human being, is a stupendous host of speck-like cells, all of which have grown from a

single speck, with such unthinkable purpose and exactness that some specks have gone to form a hand, some the blood that gives us life, some the nerves that feel heat, or the other nerves that feel cold ; some have gone to form a foot, some the bony framework, some the eye that sees, some the heart that feels, some the brain that thinks, some the tongue that speaks ; and as this process of growth goes on these invisible builders of a human being make no mistake, so that not once in a hundred million times does anything go wrong.

We think it wonderful when we watch a sculptor carving out a statue, or an artist putting together a thousand pieces of a great mosaic ; but what shall we say of this human mosaic of a million million parts, built up by living things that no man sees, working without tools, without wages, without rest, without light, even without experience, and producing, not a statue or a picture, but a man in the image of God ? What shall we say of the spirit of this brotherhood of living workers, who never strike and never mutiny, who never fail in any task, whose energies were making you and me before our eyes were opened on the world, and will be sustaining you and me until our eyes are closed for ever ?

But what shall we say of our minds, whose servants our bodies are? Somewhere in this wondrous frame of a human being is set a seed which is to grow until it rules the Earth.

THE GREY MASTER OF THE WORLD

THERE is something almost too great for words in the wonder of the human body, but the wonder of the body itself is not unmatched in the world. We can hardly pick a daisy, or watch a horse galloping, or listen to the singing of a bird, without being stirred by the same mystery, the same feeling half akin to fear, that comes as we think of ourselves. Something of this wonder is in every flower that grows, but we think of all the glory of the world about us, the Sun by day and the stars by night, the majesty of the sea and the towering peaks, and we know that the mind of a child is greater than them all.

From the life-cell of a bird may grow a bird, but the bird builds its nest and sings its song, and is gone. From the life-cell of a dog may grow a dog, and the dog may love its master and die for him, but it leaves no mark behind, and it never knew the history of itself. But the human life-cell grows into a child, the child is named Christopher Wren, and, lo! the dome of St. Paul's has come into the world.

Down through the ages, back to the days before there was a human being, and from then till now, one unmistakable Purpose runs, and it leads, by a road most clearly seen, from the gills of a fish in the sea to the voice of a lark in the sky. The human voice can be traced back to the gills of a fish as clearly as the pages of this book can be traced back to a forest in Scandinavia.

There is no doubt about these things, and when we come to the history of the building-up of the human brain the purpose behind it all is enough to stagger a world full of infidels. In the development of life the first consciousness of the outer world came, naturally, to the outer cells of living creatures, and we find that the entire nervous system of the animal world has developed from these outward cells. Very early in the history of a human being a portion of the outer skin turns inwards, becomes enclosed in what is to be the strongest part of the body, and develops into the nervous system, the seat of intelligence.

And this nervous system, though once man shared it in common with his rivals in the Animal Kingdom, has developed in man in such a way that we have now two nervous systems—the old one, which may almost be said to have remained to look after the body, and the new one, which chiefly looks after the mind.

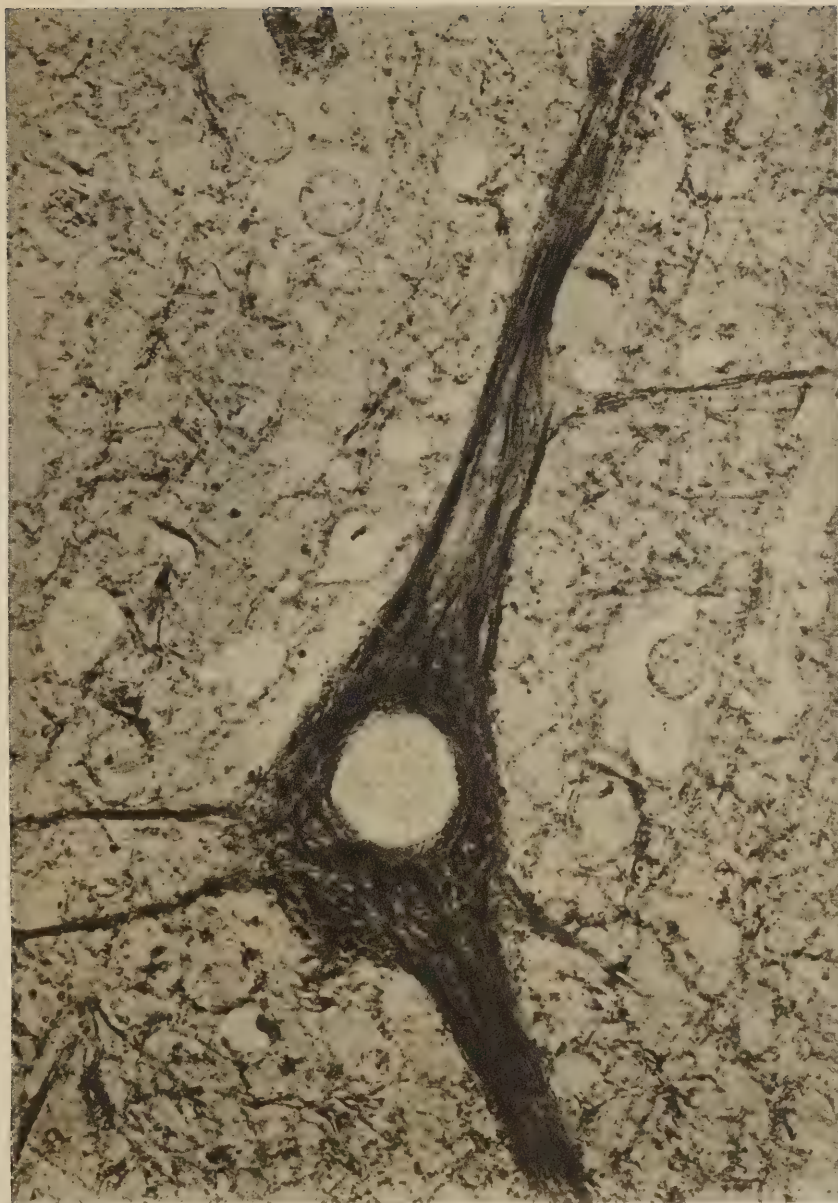
When the backbone was built up by the animal world the nerve-cell came in too ; it was almost, we may say, as if life knew what was coming with the backbone. The old system led to the old brain, over which the new brain has crept, and the new brain of man, creeping higher and higher above the old, is the newest and most amazing creation that any man knows. Inside the long tube we call the backbone, floating in a fluid so that knocks do not harm it, is a band of eighteen inches of soft material, weighing only an ounce or two, and measuring less than an inch across. It is the spinal cord, with thousands of millions of threads running through it up to where the long tube opens out and becomes the skull. In this skull, floating in water to protect itself from shock, lies the wonder of the ages, every man's book of

his own life, every man's library of thought, every man's diary of his acts for every hour he has lived. Here, in this box as strong as a rock, lives the recording angel of every man, missing nothing, forgetting nothing, recording for ever, for or against us, the things of our lives that we and God alone can know.

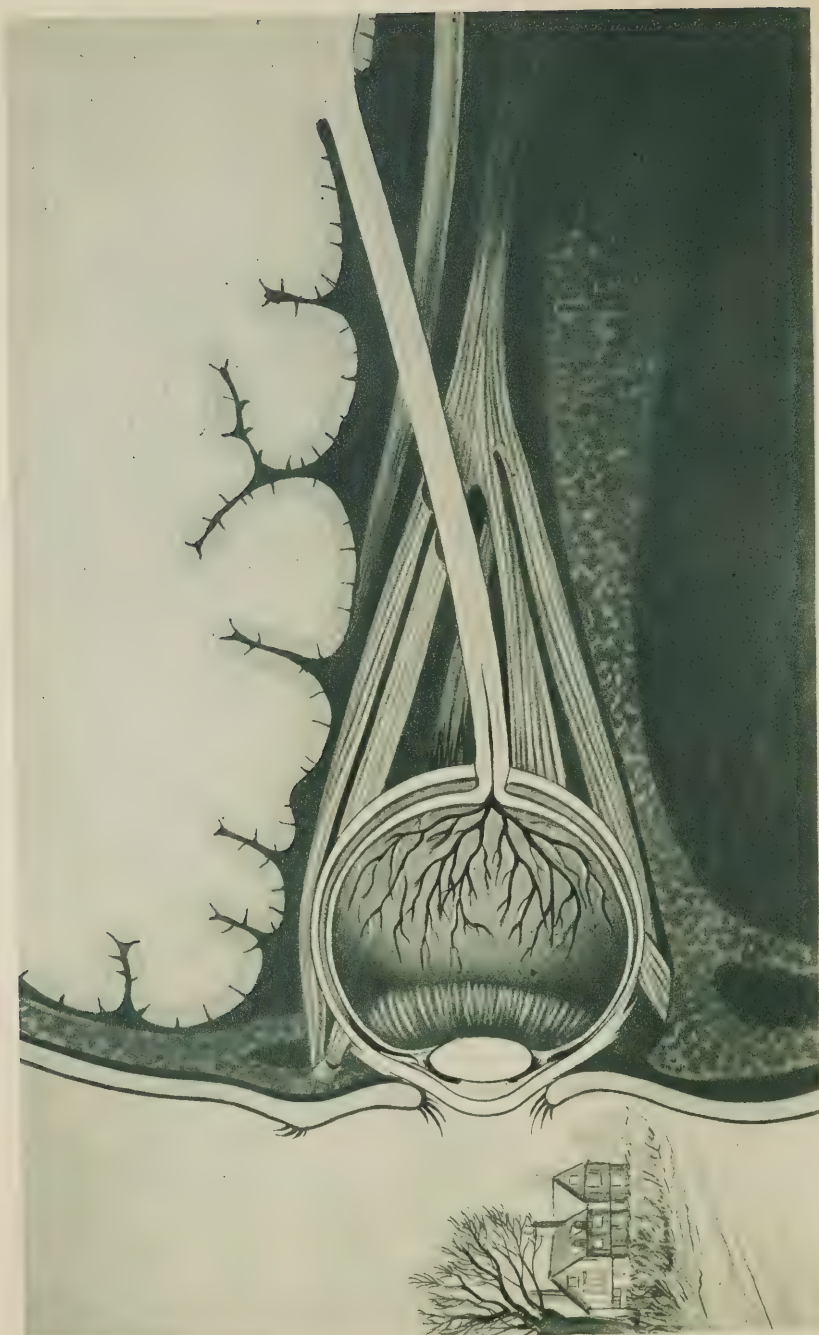
Not many ounces the brain weighs, and its grey matter only a few grains, folded over and over to give it an enormous surface, packed with about three thousand million cells, which send out their fibres like telephone wires to be in instant touch with any part of your body. Like fine thread less than a thousandth part of an inch thick, these fibres, running to the brain from the spinal cord, have three separate parts—outer sheaths for protection, inner sheaths made of a fine white substance, and, inside these, tubes of fluid along which every thought that comes, every impulse of love and hate, every yearning for noble or ignoble things, has passed, is passing, and will pass as long as your soul rests in its present home.

Lord Tennyson saw all the mystery of God and man in a flower in a crannied wall, but how immeasurably beyond all that is the mystery of these few grains of grey matter that have changed the world. These cells that know everything—how do they know? These threads that carry to the brain a child's joy in a babbling brook, a hero's thrill in the great hour of victory, a murderer's dread purpose when the Sun has gone down—how do they work? This brain, giving us all we know of light and sound yet living in darkness and silence for ever—what unknown power lies hidden here to appal the men who try to understand it?

The sound of a voice does not reach your brain, yet the brain interprets your friend's words for you, and



THE MOST ASTOUNDING THING IN ALL THE UNIVERSE—ONE OF THE 3000 MILLION CELLS OF
THE HUMAN BRAIN SEEN THROUGH A MICROSCOPE AND MAGNIFIED 1600 TIMES



HOW THE BRAIN, DIRECTING HUMAN VISION FROM A THRONE OF DARKNESS, SENDS OUT ITS MESSENGER TO LOOK THROUGH THE WINDOW OUT UPON THE WORLD

reproduces for you every sound. We see with the mind, as a great artist sees his pictures still if he goes blind. We hear with the mind, as Beethoven heard his symphonies after he was deaf. The memory of the vision, the memory of the sound, are there, and come back when we will. No ray of light ever reached your brain, yet the brain sends out an agent to look out upon the world and tell you what is there. Like Noah's dove, the nerve of vision comes out of darkness to peep through the window of your house and report to the brain what it sees. It creeps up behind the window, until light has pierced through nine layers of structure, and through these photographed the world. Every great and little thing you see about you light impresses on the million fibres of the optic nerve, which carry the vision to the interpreter, who has never been to the window in his life, and sits directing human vision from a throne of darkness.

In this grey matter lies the mysterious power of man to rule the world: this it is that Nature has given to man alone. It is "the difference that makes the difference" between ourselves and all other forms of life. Yet this unspeakable gift to man is not merely the highest achievement of creation; its greatest wonder is that it is creative in itself. It can be trained and developed; it can be guided along wise or foolish ways; and, as far as we know, there is no limit to its power.

It is for us to see that this solemn seat of power, this unfathomable source of energy, this instrument with potentiality beyond our dreams, is rightly trained and guided, and directed to the end for which it, and man, and the universe itself, were made in the beginning.

*Like the grain of mustard seed, Mind spreads
itself throughout the Earth, filling the kingdoms
of plants and animals and men. It presides in
every garden, in every country lane.*

THE SILENT WITNESSES

INSIDE a little seed is a power that no man knows. The great forces of the universe are on its side. Sun and wind and rain, night and day, spring and summer and autumn and winter, the law of gravitation and the revolution of the Earth, the silent transformers of matter and the conscious toil of human hands, are in partnership with this tiny thing ; and, as a man with a chisel and a stone produces a thing of beauty, so the mysterious relations between the forces of the universe and a seed produce a joy and power for ever.

No man can fathom the hidden powers that lie behind a cowslip in a country lane. In forming the petals and the stamens and the leaves the millions of specks that build up a flower must move in a certain path. Who is it, what is it, that guides each molecule along the one path out of thousands that it might pursue ? Who is it, what is it, that takes these millions of molecules, with countless roads before them, and leads them by the right road until first the sepal, then the petal, then the stamens, then the carpel, and at last the whole flower is made ? We have seen the mobilisation of a human army, with all the fears and hopes and perils that go in its train, but the mobilisation of the molecular army of a tulip is vaster in numbers than that, and it never fails.

We need go no farther than any country lane for the silent witness of these things ; plain for all to see, as we

look at any country scene, is the design of the Hand of God. But invisible in it all, working in the stem and the root and the flower, in the root of an oak, the egg of a bird, and the burrow of a mole, mind is working too. It was the great Darwin who compared the tip of a root with the brain; and if by intelligence we mean action with a purpose there is no man who will deny that intelligence runs through the whole plant kingdom.

See how the intelligence of a plant will work. A blade of grass will turn towards light too faint for the eye to see, and everybody knows how plants go out in search of the things they like. They arrange their surfaces to the best advantage for drinking in the light; the *Fittonia* plant has a cell-like lens which focuses light so that the plant can turn to any angle. A root will turn away from certain substances; the root of a cabbage or a pea will grow towards phosphates and turn away from poison. Mosses and ferns will show a preference for one food rather than another; put the sperm cells of moss and fern into water with a little cane sugar and malic acid, and the moss cells will collect the sugar and the fern cells will collect the acid. Let an insect settle on the sundew plant, and the tentacles of the sundew pounce on the insect and pin it down; if there are two insects the tentacles will distribute themselves and pin both down. Give it a grain of sand or sugar, or a bit of wood, and the sundew will make no attempt to consume it, but give it something it likes and the plant will eat it.

You think yourself clever at some things, but have you ever thought how clever a root is? Plant a potato too deep, and what will it do? It will correct your mistake: it will throw up a new shoot to the proper

level and send you a potato from that. Plant a bean upside down, and it will turn over. Perhaps you have not wondered why a root bores its way as a spiral into the ground, but it knows the best way to its food supply : a spiral root comes in touch with much more soil than a root going straight down. As the leaves go in search of light, so the root goes in search of water. The root of a poplar tree has been known to travel for water through thirty feet of soil, under a wall, and through the brickwork of a well. Every gardener knows that a plant adjusts itself to the circumstances of its life : if it is rich it lives a life of ease ; if it is poor it struggles hard for a livelihood. Let a baby be born in Poplar, and the chances are that its life will be much harder and its years shorter than if it were born in Mayfair ; and it is simple truth that we can change the life and health and appearance of a plant by changing its environment.

We have only to walk in a garden to feel the beating heart of Nature. The sensitiveness of matter—what a wonderful thing it is ! We can shut our ears and eyes and hearts to it, as we can shut them to an enemy, but it is deep and real and true if we come to Nature as a friend. We touch the leaves of what we call the Sensitive Plant and they shrink in response as if something had hurt them ; but all Nature is sensitive like that. A poet has asked if a flower feels the glory of the sun, if the corn bends joyfully before the wind, if a tree feels a pang as it falls, and science cannot deny the poet's fancy. We are bound to feel that something very much like this is true, and that nothing we know is dead beyond all sense.

Every plant in a garden is sensitive, every plant responds in some way to our touch. It was Charles

Darwin's son who told the British Association that not only sensitiveness, but consciousness, ranges throughout the whole plant and animal kingdoms, and those of us who cannot give our lives to mysteries like these will hardly dare to challenge a man who does. And let us turn for a moment from what we call living matter to matter we call dead—from a plant itself, shall we say, to the gardener's pruning hook. Perhaps we can understand the sensitiveness of a flower, but what of a piece of iron? Well, Sir Joseph Thomson, one of the master minds of our race, has shown that it is possible to vary the environment of an atom so that heredity seems to count in the atom as in a living being. We can wound a piece of growing wood until it dies, we can poison a copper bar, we can make a piece of iron tired; and every laboratory knows the sort of crystals that will not form in a fluid unless a perfect crystal be put among them.

One of the wisest men in India has given his life to the study of sense in metals and plants, and he has no doubt that sensitiveness runs through the entire range of metals, plants, and animals. He is Dr. J. C. Bose, and his experiments in the laboratories of Calcutta University show that even a metal seems to have its moods. It has its ups and downs, it can be exalted or depressed, it can be affected by heat and cold and weariness, excited by stimulants, or killed by poison. Nowhere has Dr. Bose detected any failure in this responsiveness of matter, and he has come to the conclusion that these things are determined by "the working of laws that know no change, acting equally and uniformly throughout the organic and the inorganic world."

What does it mean? We do not know, but certainly it means that matter is not dead. Are we not bound

to believe that the heart of matter throbs with some mysterious and majestic influence whose origin is near the fount of life ?

There are those who tell us matter does not exist at all, but that it is a tremendous concentration of electric energy, which takes all sorts of forms—light as gas, thin as air, transparent as water, solid as stone—according to laws that never fail. However that may be, we know that matter is for ever moving, that different kinds of it are merely rearrangements of the same materials, and that all the wonder of the visible world is made by grouping a small number of things in different ways.

We take a few specks of these different kinds of matter, lying where they may throughout the Earth, and in the marvellous processes of the mind behind it all one becomes the wild thyme on a bank that Shakespeare knew ; one grows to send the dread roar of a lion through the jungle at midnight ; one lies in the warmth of a nest hid in the golden corn until at last it rises to sing the lark's song of another day ; one wins such power down in the earth that it throws itself out and lifts up a ton of oak and spreads out arms and branches to be the glory of an English wood ; and one becomes a little child.

*The ant runs across the path, the spider throws
its web from the gazebo wall to the old yew hedge,
the bees are visiting the hollyhocks ; and behind them
all and through them all is the everlasting Mind.*

WONDERFUL THINGS THE ANIMALS DO

AGAIN and again, as we think of the animal kingdom, it is hard to resist the feeling that animals have learned the mottoes of our copy-books. They act every day as if they had taken thought for the morrow. They take the line of least resistance. They look before they leap. They know that unity is strength. They save for a rainy day. They seem to understand that a stitch in time saves nine. It is certain that they understand that for everything there is a time and for everything a place.

Think of the spider and its web. The web is as well thought out as the dome of St. Paul's. The spider builds as if it had studied stress and strain like an engineer. It makes one kind of road for itself and another for its victims ; it meets the danger of storms by making new runners.

Go to the ant. How many among the millions who trample them to death know the wonderful things these creatures do ? They will capture the green-flies that devour our roses, make them prisoners, build galleries in trees to keep them in, milk them, protect their eggs to ensure a continued supply ; and when new flies are born the ants will carry them to the plants that green-flies live on, and take them back to prison.

Long before man had built his first bridge the beaver had built his dam ; long before man had thought it all out the beaver had arched his dam against the stream and made little sluices. One of the fundamental rules of engineering was working in the world ages before Archimedes. The beaver builds a lodge at his dam, and a storehouse for winter.

For countless ages he has solved the problem that so long baffled Russia ; frozen in by ice, he seeks and finds a free water gate through which he can receive supplies.

The bees, perhaps the first sanitarians in the world, have established a civilisation as wonderful as ours. They toil and build and store ; they obey the laws and punish those who break them ; they live and move and have their being impelled by patriotism beyond the dreams of men.

We think of this wonderful behaviour of animals and call it instinct ; but what is instinct but a sort of immutable mind, fixed by natural law ? A man is lost, he works his way home by the stars, and we call it mind at work ; a crab is lost on the Yorkshire coast, it crawls back to its home in Lincolnshire, and we call it instinct. We must not deceive ourselves by the words we make.

A crocodile taken out of its egg will find its way instantly towards a stream ; a frog put in a bag and taken from water will go straight back to water on being set free.

An eel, unable to develop in the sea, leaves the tidal river and goes overland to inland waters ; and when the time comes it crosses the fields and returns to the sea to lay its eggs.

A limpet has no eyes, but every limpet knows its spot on a rock. It comes down at low tide and goes about to feed, and it finds its way back infallibly to its chosen dwelling-place.

The nightingale, born on a Kent hilltop, flies to Africa ; it goes to the right place at the right time, moved by some innermost understanding. It is not driven by hunger, for if it stayed till hunger came it would arrive too late. Cage a nightingale, and it will beat its wings against the bars when the time comes to go.

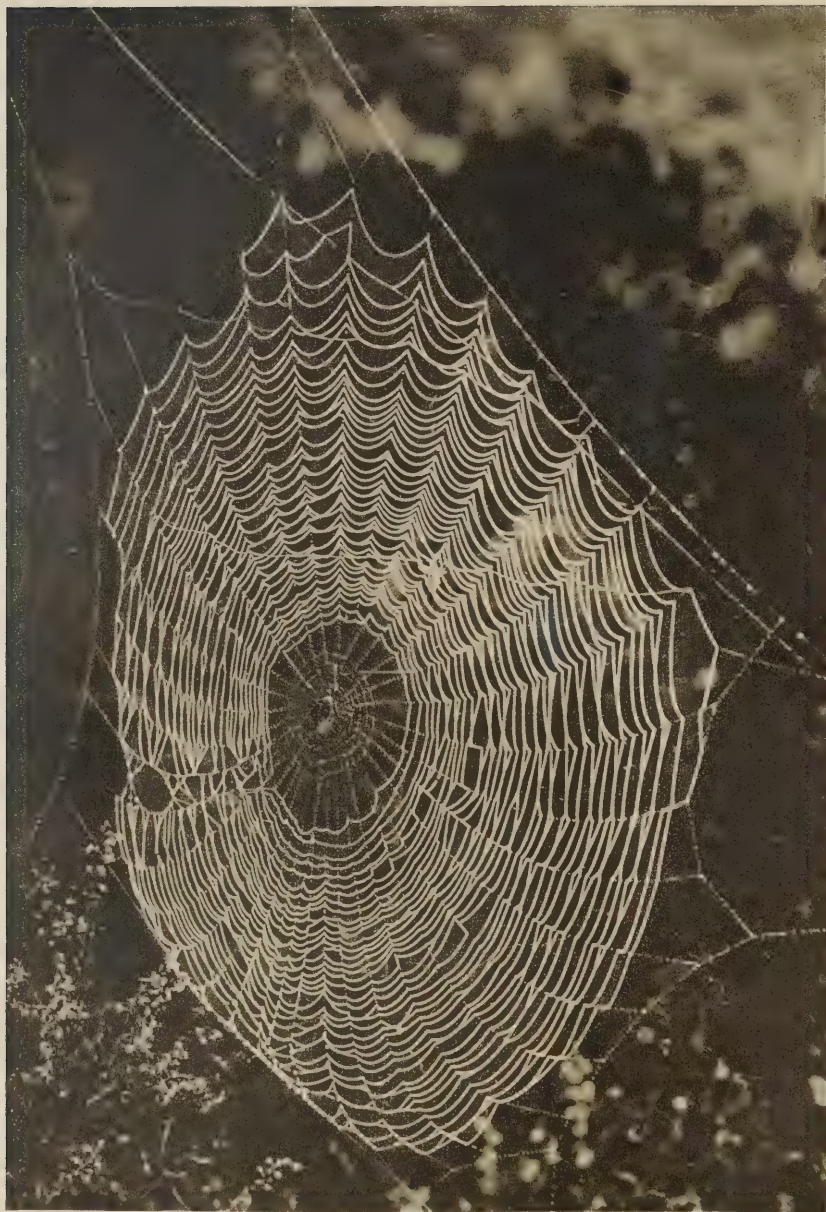
A pigeon will bring a general his despatches ; one has been known to come from Rome back to its loft at Derby. It took a month, flew a thousand miles, and crossed a range of mountains and twenty miles of sea.

A horse will take a lost man home on a dark night ; one has taken its dead driver home through London. A cat, taken a hundred miles in a box, will find its way back



ONE OF THE MOST TOUCHING SIGHTS IN THE REALM OF NATURE IS THE EMPEROR PENGUIN SITTING FOR WEEKS THROUGHOUT LONG ANTARCTIC NIGHTS, KEEPING AN EGG WARM

Photographed by Mr. Herbert G. Ponting



THE WONDERFUL WEB A SPIDER MAKES



JACOB ORANG-OUTANG SHAPES A PIECE OF WIRE INTO A TOOL TO MAKE A WAY OUT OF HIS CAGE



THE LOVELY BIRD THAT FLIES ALMOST FROM POLE TO POLE IN SEARCH OF SUNSHINE,
THE ARCTIC TERN. *Photographed by Mr. W. Bickerton*

to the old fireside. A dog will find a traveller buried in the snow, dig him out and rouse him, and fetch help.

In the deepest sea we find some form of life ; in the lowest life we find some form of mind. We all know animals that act with an intelligence we do not find in some men.

There was a chimpanzee at the Zoo who made a tool, and used it to try to make a way out of his cage. There was an orang-outang at the Zoo who broke a piece of wire, used it as a saw, and made a hole through which he did escape. He picked up a waiter, put him on a table, and ran.

There was in Pelorus Sound for twenty years a dolphin, protected by the Government, that piloted ships through the dangerous strait approaching New Zealand. As the ship approached, Pelorus Jack would dart from his hiding and swim ahead, going steadily until he reached French Pass, when he disappeared. He never went beyond, but up to that point no human pilot was more reliable than he.

There are cormorants that catch fish for us, cheetahs that catch deer, captive elephants that catch and tame wild ones.

There was a frog that answered to its name when called by Professor Romanes. There were fishes that would answer a bell rung by Sir Joseph Banks. There was a tortoise in Gilbert White's village which would hobble every morning to meet the old lady who fed it. A crocodile has been known to have an affection for a cat. A snake has been known to pine for its absent owner, and to spring with delight on his return.

Even the worm is not without intelligence. He selects his food and plugs the mouth of his burrow. He pulls in leaves and arranges them in a certain order to close up the entrance. He will hide his door with stones.

Everywhere the wisdom of life is seen in the Animal Kingdom, and we see Evolution going on all around us. Buffaloes in Matabeleland used to feed by day ; now they come out by night. They have changed their habits since plague destroyed nearly the whole of their race, and it is thought not impossible that these dumb creatures may have discovered that the insect which carries the

plague germ does not fly by night. There would be nothing incredible in that. Animals act as if they knew.

Could anything be more wonderful than the preciseness of the knowledge of the tiny fairy fly, sometimes so small that five can walk abreast through a pin-hole? The mother finds a particular insect, and lays her egg in its body *exactly when and exactly where the egg of the larger insect is forming*. The larger egg is formed with the fairy fly's egg inside it, and the fairy fly's egg produces a grub, which lives by eating the larger egg, and then emerges with four wings.

But the examples are beyond all counting. We find them in thousands among horses and dogs. Who has not heard of the bear that will stir the water to bring a bun towards him, or the crow that will drop a mussel on a stone from a height of ninety feet, and seems to choose its favourite stones for breaking victims on? Who put into the head of the eagle the idea of driving out one deer from a herd and frightening it towards a precipice? Who will deny the power of a sort of thinking-out to the bird that fetched a companion to help to battle with a dog for its dinner-bone?

And what shall we say of the harvest ant, which has the marvellous power of collecting seeds, putting them down in his warm, moist nest where they should naturally start to grow, and checking their growth till it suits him that growth should begin? When the seeds begin to grow, the harvest ant lets the process proceed until the sugar is formed, and then carries off the sugar to dry in the sun.

We see it everywhere, this deliberate preparation for the morrow. The butcher-bird impales his prey on thorns, and leaves it till he wants it. Squirrels and jays and woodpeckers, like rats and mice and men, lay up

stores for the future. Even the rattlesnakes gather into companies for warmth in the long winter sleep, and separate when the need for food comes. They know there is warmth and comfort in company, but that too many rattlesnakes together will impoverish food supplies when they awake. They mobilise at the right time for the right purpose, on the principle which drives many groups in the animal world to defend their own herds against animals that hunt in packs.

If we could speak of affection in the animal kingdom we should hardly expect to find it in wasps and crocodiles ; yet allied to their intelligence is something touched with the glow of emotion. The crocodile buries its eggs in the hot sand, comes out and taps the ground, and, when the young cry out, scrapes the sand away and introduces them to the world. The solitary wasp, living for the future of the race, stores up before it dies food for the unborn that it will never see.

We find it everywhere, the patriotism of the lower race. The chapter of natural history which tells of the gallantry of the stickleback and the devotion of the whale in defence of their young is one of the most beautiful that can be written, and it can be multiplied a thousand times. Men waited ages for news of life in the Antarctic regions, and when it came at last it was the old, old story of a mother's devotion to her children. Nothing in the realm of Nature is more touching than the wonder of the emperor penguins and their eggs. They stand for weeks during the long Antarctic night with the egg between their feet, keeping it warm, and the parents share the patient task between them, faithful witnesses to that mysterious power which reaches everywhere, deep into the innermost, wide unto the outermost.

*A gull flies past, and what a vision leaps
to mind ! For this bird in my garden has a
cousin which flies almost from Pole to Pole.*

THE INCREDIBLE JOURNEY OF A BIRD

WE talk of the wonder of flight, and the power men put into engines ; but a bird can beat man all the time.

Is there any one of these engines of man, with all their wondrous mechanism, that can equal the achievement of the bird that flies every year between the Poles, almost from one Pole to the other, all in the day's work ? It makes no fuss about it ; it wakes up, and starts, and gets there.

We send out expeditions to those great solitudes, and up in the Arctic North, down in Antarctica, men follow the trail of heroes who have gone before and left their bones to bleach upon the snows. In the South lies Captain Scott, in the North lies Sir John Franklin, and we know little of these vast places of ice and death, the lone white continents of the Earth.

But we have in our British islands the beautiful terns and gulls that have among their cousins a traveller whose match does not exist in any known realm of life. For this cousin of our tern, living through the gorgeous sunshine of the Arctic world, flies down, when the Arctic night begins, to catch the sunshine round the southern Pole. It flies across the Earth in search of the sunshine it loves. It knows where it will find it ; it knows exactly when. It leaves in time to pick it up, but it misses the Antarctic night, and it goes back north when the Sun goes back. It has more sunshine in its life than any living thing on Earth.

THE INCREDIBLE JOURNEY OF A BIRD 77

In the great story of bird migration is nothing that equals this. We think of a thrush born in the north of Scotland and found in Spain at the end of its first summer. We think of the baby nightingale that flies from a Kent hilltop to Africa. We think of Richard's pipit nesting in Siberia and wintering in France; of the thousands of golden plovers that fly for two thousand miles from Alaska to Hawaii every autumn and return every spring; but there is nothing among them all to match the tern.

What the tern does we do not know exactly, for there are no men to watch it when it sets out; we do not know the way it goes; and nobody sees it arrive. But what we know is that it must be about twenty weeks flying from South to North, and that it stays up there about fourteen weeks and spends the other eighteen weeks of every year around Antarctica.

As a man catches the Midnight Mail, so the tern catches the Midnight Sun. As winter is coming in Antarctica it flies up north, and arrives soon after the Midnight Sun, which never sets until it leaves again. It goes as far north as land is known, and an Arctic traveller has told us what it finds on its way through the great white world. At midday, he says, the blazing Sun converts a thousand pools into sparkling jewels, and there is a lavish supply of food. Bushes cover the ground laden with luscious berries, and the Sun that never sets brings on plant life quickly. But hardly has the fruit ripened when the snow is over the land again—not to destroy the fruit but to keep it in cold storage, fresh for the birds when they arrive next summer; as arrive they will, as surely as the Sun arrives at its destined place.

Is it not a miracle, this flight of the cousin of the bird that hops among the bushes of my garden?

So through all things runs the power that has transformed the world. Before we leave the wonder of the morning, the sight of the dawning glory of the Earth, let us see how infinite has been the victory of Mind.

MIND MARCHING ON

FROM the creeping life of the ocean bed to the beautiful life of a little child we have seen Mind making its way. By laws that never fail, by ways that no man knows, impelled by a power beyond our understanding, Mind climbs ever upward.

We find it first behind the mighty masses of the Earth itself, the boundless heavens, the sweeping winds and storms, and the rolling seas.

We find it then in that marvellous kingdom of plants which live their silent lives of service on the spot where they were born, yet yield their offspring for generations untold to grow and spread and cover the Earth.

And then into the animal world it comes ; now it is climbing to its great seat of power. We see it in the fishes that first come ashore with the tides ; in the reptiles that creep about the swamps and marshes and inhabit the rivers ; in dragons that fly and in the birds that sing the first songs heard on Earth ; and at last we see Mind groping its way through the terrible forerunners of the Animal Kingdom.

In those monstrous creatures, lords of the early days, tramping the earth with a weight of several tons, terrible and hideous but some of them majestic to look upon, it is said that a sensation would sometimes take two seconds to reach from the tip of the tail to the brain, so great a barrier was matter still in the path of Mind.

But Mind has never turned back ; it has never been beaten ; and today it is master of all the universe we know.

We need go no farther than the Bible for the witness to the place of Mind in God's Creation. " In the beginning was the Word," says the opening of the Gospel of St. John ; but the original Greek for Word means reason and speech, or *mind and the expression of mind*, so that it served to suggest Mind expressing God in the world. So we may read the opening words of St. John : " In the beginning was mind, and the mind was with God, and the mind was God. The same was in the beginning with God ; all things were made by it, and without it was not anything made that was made." We may talk of Mind, says the Poet Laureate, as the mediator between God and Man.

Mind has come into its own. It dominates the living world. It moves and moulds and changes matter to its will. How it has conquered, the marvellous mechanism it has built up for itself throughout the Animal Kingdom, is a long tale to tell, but one thing will help us to understand it.

Mind, in those early days, took two seconds to travel through the physical frame of the Lord of the Earth : today the Lord of the Earth can send a sensation round the planet in less time than that.

*A little man on a speck of dust, perhaps,
but what a house of miracles he inhabits !*

THE MYRIADS OF LIVES INSIDE YOURS

THE physical house you live in, the body that Nature has fashioned for you under the guiding hand of God, is in every sense a separate living thing. It has an existence of its own apart from you ; it does a million things a day that you know nothing of ; but the truth is more mysterious even than that, for a human body is not one but many living systems. It is like a continent with many nations on it, each nation with many towns, each town with many roads, and crammed into these nations and towns and roads are myriads of separate lives and movements, all working to a perfect end.

One thing we may say of our bodies : the more we know, the less we feel we know. You may go through life not bothering much about your living house, caring nothing how the machine works so long as the wheels go round ; and so marvellous is this machine that the chances are that yours will run as long as your soul needs it, when your soul will slip away and the wheels will stop. But the man who tries to understand his body finds each truth that he discovers more bewildering than the ignorance it drives away, and more astonishing than anything his mind had ever conceived.

It would seem strange if you should be asked how you came to be reading this, or how you came to be sitting at your fireside listening to a friend, and yet the whole answer to that question would fill this book. There

you are, there you sit and read, talk and listen, and you will say it is all as simple as the ticking of a clock. Nothing could be simpler than listening. Well, let us see. What is happening as you sit listening to a friend ?

The room in which you sit stands at the bottom of an ocean of air, as real an ocean as that on which our liners sail from London to Melbourne ; and in the air of this ocean a voice is causing a thousand kinds of ripples, which we call waves of sound. The waves travel in all directions, striking the walls around you and the delicate drum at the end of the outer channel of your ear. Beyond this drum is a little chamber, cut out of the hardest bone in your body, which you are at this moment filling with air as you breathe, so securing even pressure on each side of the drum. If the voice speaks rather softly, a little muscle shrinks into itself, so as to tighten the drum of your ear, and every time a word falls on your ear the drum carries the waves of sound into the air-chamber, where they hit a marvellous bone chain, which carries them to an inner drum, beyond which is a chamber filled with fluid.

Out of this inner chamber runs a spiral canal, and along the whole length of it is a platform made of delicate strings like the wires of a piano—tens of thousands of them. Perched on this piano-board are little cells from which rise hundreds of thousands of fingers, with their ends in the fluid of the canal. The waves the voice makes in the air flow through the canal and probably sweep these little fingers to and fro, so that their movement has an effect in the cells on the piano-board.

And now an almost incredible thing occurs. At these cells the sound-wave stops. No sound enters the brain. The human brain is as deaf as a stone ; no sound has reached it since the world began.

From these cells at which sound stops the nerve-fibres run to the brain, and here a sound-wave becomes a nerve-current, as different as anything can be from a sound-wave, and so marvellous that a sound-wave seems almost commonplace beside it. It is said that some people can distinguish twelve thousand qualities of sound, yet, though each sound sends a different kind of current, these nerve-fibres carry them all. Think of the conductor of an orchestra, and the medley of sound that strikes the drum of his ear. Each separate tone reaches his brain ; he knows if one of a hundred notes is wrong.

That is a quick glance at the journey of a word, at the way in which a thought from one brain travels to another—first through air, then through bone, then through a canal in which hundreds of thousands of little oars seem to row it to a sort of electric station, which transforms it into a current, and tells a particular spot of your brain what it is your friend wants to say to you.

We have looked at one of the five main gateways of sensation, the chief highways of our communication with the world about us. There are many minor gateways, but the main roads from the brain to the world are the roads that every one knows—sound, sight, touch, smell, and taste. Those senses that give us chiefly physical sensations have dwindled in importance as man has risen in the scale of life, so that smell and taste have rather limited uses for us now. But who can say how much we owe to touch and sight and sound ?

Consider what our world would be without sight alone. The noise of thunder would strike terror to our hearts, and suggest something somewhere that we could not reach ; a shower of rain would suggest that something terrible was happening above our heads ; and the coming

and going of the Sun would give us dim suggestions of something far away.

But what should we know of the universe about us ? We should have no conception of distance and no idea of colour. Our knowledge of the world would be confined to what we could touch. There is hardly a page in the book of knowledge that could have been written without the aid of sight, and, as for hearing, we have only to think for a moment of a world without music, without language—and therefore without books—to see how great a part sound plays in history, and to realise how impossible our lives would be for a single hour but for the two noble senses of sight and sound.

Consider, therefore, the astonishing development of these two kindred senses, the one perfecting the other. It is impossible to think of it without realising the amazing cooperation of forces that have been at work from the beginning of time for the making of man, and the amazing cooperation of the senses upon which the life and power of a human being depend.

We talk sometimes, when we read a man's biography, of his crowded life, but what would a true biography of a human being be like ? There are more complete and separate lives within each one of us than there are men and women on the Earth ; there are thousands of times more parts in the human body than in any machine that has ever been made ; and between all these lives, and all these parts, exists a perfect sympathy. Each serves its own purpose and works unceasingly to a single end.

Think of the working of your body as you sit at rest. What is it that happens, let us say, when you go to a play, or a concert, or a church ? Perhaps you are touching the seat in which you sit, and a message runs along

the nerve at your finger-tip to the cell from which it comes, and from the cell on to the brain ; and the brain knows that what you are sitting on is something hard which will not give way, and so you know that you may sit there without danger. You look up, and the image of the walls around you is thrown on to the curtain at the back of your eye, which carries the impression back to the brain ; and instantly some group of nerve-cells in your brain communicates with another group, where the image of these walls was registered long ago, and you say to yourself, " I remember being here before." And these little cells go on to tell you when it was you came before, and whether you took a taxi or a bus ; and perhaps they remind you of the very seat in which you sat, or of the friend you met going home, and the colour of the tie your friend was wearing, and of what he said to you ; or perhaps you remember that you missed your train, or that you left a glove behind, or that it rained, and you had no umbrella, and you caught cold.

And so these three thousand million nerve-cells in your brain will turn back the pages of your diary for you in a flash ; but you look up and remember that you are at church, and that somebody is speaking ; and as you listen your brain interprets for you what is said, and reminds you of a hundred things you know related to the subject. And at the same time you hear a noise outside, or see the movement of a head in front of you, or perhaps, for some reason, there comes into your mind a vision of Westminster Abbey. *At any rate, there it is now, whether you wanted to think of it or not.* And as you are conscious in this way of sight and sound and touch, perhaps you may smell a rose in somebody's coat, so that another sense is busy too. And perhaps

your body feels a little tired of sitting so long in one position, and a particular set of nerve-cells in your brain gives notice to a particular group of muscles in your limbs, and you move a little and are at ease again.

But the fact that your body grows tired as you sit there reminds you that the wheels of your machine are going round whether you work or rest. Every rod and shaft and crank and lever in this machine is at attention, straining to serve you. You move your hand, not knowing ; but what is it that happens ? It is done in a twinkling, but there has gone out from your brain a current which acts on the muscle exactly as the electric spark acts on the carburetter of a motor-car, with exactly the same result. In the motor-car the current explodes a speck of petrol ; in the muscle the current explodes the sugar built up from your food, so that the fibre of the muscle shortens and you move your hand.

But that is not the whole story of how you moved your hand. An explosion produces waste, and the waste must be carried away, for it is poison, and so a stream of blood carries off the poison in your body, as the Thames carries off the waste of London to the sea. And so, the more you move in your seat, the harder you drive your machine as you sit, the more necessary it is that windows should be thrown open, the more necessary that houses in towns should have green gardens, and streets should have green trees, to take the poison that goes out through the windows and build it up into life again. We see how impossible it is to try to think of what is happening within us even in a single minute.

All these sensations have come as you sit still, yet you listen to what is said and miss nothing, for these sensations come by thousands of ways, so that one does not

disturb the other, and a stream of impressions reaches your brain and registers itself there, clearly and indelibly, so that nothing that ever happens can remove them as long as the brain is alive. Memory never forgets ; the name you cannot think of, the story you wish you could remember, are there, and perhaps some day in your sleep, perhaps in a delirium, they may leap from the tablet on which they are printed, from which no power save death can ever blot them out.

So wonderful, so solemn beyond words, is this house we live in. If it is not eternal in the heavens, it is at least the house of a traveller in Eternity. Words fail us when we would describe it ; not even the thought of the Sun and Moon can stir us as deeply as the thought of ourselves. Fearfully and wonderfully are we made, but the brain that can make an aeroplane or think out the wireless telephone is baffled at the thought of itself or the house of miracles it inhabits.

And this house of ours, with all its wondrous powers, infinitely more complex than any piece of architecture on the Earth, is built up silently and in the dark by unseen powers. Think of them and what they do. They are not to be defeated. Take the cells of a human being in its early stages of development, and disarrange them as you might disarrange the bricks of a house or the wheels of a watch. The house or the watch would remain as you left them, but the cells of the embryo would *put themselves right*, and the structure would develop in a normal way. We may upset the mechanism, we may think we have put a spoke in the wheel, but Life goes on with its work as if nothing had happened.

One thing more let us say of our bodies. Could anything be more wonderful than the way in which the

powers of the body come to our aid in time of need? The body makes special blood cells just when they are wanted—then and at no other time. That is to say, it creates an army to defend itself against attacks; it gives a man new physical strength in a sudden crisis. But equally true is it that the body gives a man new moral strength in time of need. When a great fear seizes a man the body brings him strength. One of the most remarkable discoveries of our time is the fact that the stirring up of emotions calls into action the muscular and nervous forces that a man needs.

We all know that a frightened man can run faster because he is frightened. We all know that a man can develop amazing cunning in some desperate situation. We all know that men behave with superhuman courage in the face of sudden peril. It is part of the mysterious working of the human body, of which we are all unconscious. When a man faces danger bravely he has a partner of whom he little wots, for his body comes to his aid in that dread hour, and the emotion aroused in him by the sense of danger sets to work powers in his body that suddenly create new supplies of sugar, giving him new vitality. All unknown to him a new power has come into his life.

From now till the end of our lives we could sit and think of the wonder of our bodies and not exhaust it. Let us leave it here with this thought, that if, in the place of this mysterious power within our frame, we had a conscious partner all through life, knowing us thoroughly, intimate with all our moods, understanding all our needs, able to control us and direct us, we should not be better for it; he could do no more.

Now comes High Noon, the great hour of the world. Shall we stand on our hilltop, where Nature gives her promise of goodwill, and give to Nature's God our promise of good faith?

I BELIEVE

I believe in God, creator of the heavens and all the countless worlds in space, creator of the Earth on which we live, designer of all things, builder of all things, architect of the mountains and the hills, maker of the valleys and the seas.

I believe that God created life and set it in the boundless universe; that Life has made its way from lowly forms under His guiding hand, ever growing, ever changing, ever increasing, entering into countless forms, filling land and air and sea, multiplying abundantly, until the whole round world in which we live throbs with life and teems with power, and beats like the living heart of God Himself.

I believe that one increasing purpose runs throughout the ages; that Life has been controlled from lower forms to higher forms; that the kingdoms of plant life the seasons bring forth are the living pillars of the animal kingdoms, sustaining all the myriad things that live and move and have their conscious being upon the surface of the Earth.

I believe that the purpose that has run through all the years of time is the building up of the highest powers of Life in man, the lord of all the animal world, inhabiting a body fashioned through the ages into a wonder too solemn for words, crowned with a mind that has made him master of all living things.

I believe that my physical temple, the body that my mind and soul inhabit, is a holy thing, to be guarded from danger and shielded from evil, that I may be of sound mind in a sound body, strong of muscle and pure of heart and zealous of soul, with a great love of Nature and a mind to do the work that is set me to do.

I believe that the work that is set for me is to carry on the purpose that has run throughout the ages, to learn to understand Nature that I may obey her, to help on the creative evolution of the world, to make known and to do the will of God.

I believe that all life is sent to serve this same great purpose; that all men are comrades and members of one great household; that who sins against one sins against all; that not the least of these little ones can suffer without our Father's notice; that in the mighty unfolding purposes of God He does not scorn, but uses, the pure heart of a little child, the tender love of a woman, the strength of a man.

I believe my heart and soul and body and mind are instruments of God; that I must keep them fair for Him to use; that I must be to all men as I would that men should be unto me; that I must put away from me all mean and evil things, and cherish whatsoever things are pure and true and generous and noble and sweet and strong, that the Kingdom of Heaven may grow within me.

I believe that in us and through us, from hour to hour and from age to age, the will of God is working; that we are the conscious instruments of His great purpose, carrying on the evolution of the world or hindering it.

I believe that all the noblest work of men and women, the patient bearing of great burdens, the sacrifice for others, the toil without reward, the spreading of knowledge,

the healing of pain, the forgiving of wrong, the charity that knoweth no evil, the dreaming and inspiring, the comforting and the lifting up, are all of God.

I believe that the highest and broadest and deepest expression of the will of God upon the Earth was in the life of Jesus Christ, the Son of God ; that the highest hope of the world is in the message that He left for men ; that He died that through His great example and His great sacrifice we might feel the power of truth and everlasting righteousness, and build up for ourselves the Kingdom of Heaven.

I believe that I shall not die ; that I shall sleep to wake ; that all that is good and pure and noble in me shall live again ; that all that has been has been but a building-up, that all that is is a building-up still, and that all that is to come, when we sleep and when we wake, is the lasting crown and glory of Eternal Life,

NOON

The high tide of the heat and burden of the day

*Oh, the high noon, and the clear noon,
The noon with golden crest ;
When the sky burns, and the sun turns
With his face to the way of the west !*

*How swiftly he rose in the dawn of his strength ;
How slowly he crept as the morning wore by ;
Ah, steep was the climbing that led him at length
To the height of his throne in the blue summer sky.*

*Oh, the long toil, and the slow toil,
The toil that may not rest
Till the sun looks down from his journey's crown,
To the wonderful way of the west !*

Henry Van Dyke

Now we are at the noontide of the day, the high tide of the surging and the toiling of the world. For ages men have laboured that we might have life. For ages men have borne the heat and burden of the day.

WHAT ARE WE DOING ?

WHAT is it that has madet he barren Earth a garden, that has changed the scene of man's life from a wild battlefield with the beasts to a workshop in which he can build up a new world ?

Professor Huxley and Herbert Spencer sat one day by the sea, watching a man bathe, and they laughed, as they gazed upon a naked man, to think that he should have overpowered all other creatures. What is that something, intangible, invisible, which impels man on in the universe, which has raised him to the very heights of power, and enabled him to fashion Nature itself to his will ? It is the world's great mystery, the supreme thought that has engaged the great minds of all time.

How man rose out of the mists of time, how he made a fire, how he tilled the earth, how he sailed the seas, how he made machines ; how he invented speech and writing and society ; how he fashioned races and nations ; how he wrote books, painted pictures, and carved marbles ; how hordes of savages ceased destroying each other and built up great empires ; how their empires rose and swayed the world, and fell ; how Babylon became a heap of stones ; how men tunnelled the Alps and spoke across the seas ; how they built cities, made laws, and set up schools ; how they captured and harnessed the forces of the invisible world ; how civilisation came out of

chaos—there is no story in the world so wonderful as this, the story of the triumph of the mind of man.

There are those who tell us that man could never have obtained the mastery of the Earth without his thumb, and it is true that if human beings had had four fingers and no thumb the history of the human race could not have been. But, amazing as is the human body, men might still have been living in caves and battling with beasts if their bodies had been their chief possession. Man is a creature, says Hamlet, looking before and after, and man's power of looking before and after has made him lord of life.

The mind of man, that cannot understand itself, has built up the whole structure of knowledge. If we could imagine a man born in the world tomorrow, finding the world a blank, with not a human being or a book to tell him yea or nay ; and if we could imagine this man peering into the skies, digging into the earth, descending into the seas, flying into the air, measuring the stars and photographing the Moon, bending intently over a grain of earth, touching a field as with a magic wand and raising up flowers and fruit, snatching power from space and water to do the work his own hand could not do, taming animals to bear his burdens, making machines to increase a millionfold his powers of speech and sight and hearing, filling the air with music and the world with colour, talking to a piece of wax and teaching a piece of wax to talk back to him, reproducing any scene his eyes could look upon for his pleasure after it had passed, making light to shine through stone and inventing eyes to see his own heart beating—if we could imagine such a man, doing this and a million times more than this, with no other instrument to help him than his own mind,

grown from a tiny speck that no eye could see, should we not think of him with fear?

Should we not think him almighty? Should we not almost think him—God?

Yet man has done that. Man is by searching—let us say it with all reverence—finding out God.

And yet the wonder of this age-long quest of man, freighted with the happiness of the race, has been the agony of it. Looking back on the history of knowledge, it is as if mankind has been reluctant to go forward, as if it had thrust back the cup of happiness held to its lips, as if, doubtful of its dark past, fearful of its darker future, mankind refused to tread each new path to light.

Not more than a few hundred years have passed since discoverers and inventors worked by stealth, hiding their knowledge as if it were a crime. The man who proved that the Earth moved round the Sun dared not publish his discovery till he lay dying. The man who found that the Earth is not the centre of the universe was burned at the stake in the streets of Rome. The man who found why an apple falls to the ground was declared to be impious and an infidel. The man who found that the Earth does not stand still was worried and harried by the Inquisition. The man who found that the blood circulates through the body was scoffed at and persecuted. The man who made the first telescope begged in vain for the nearest professor of philosophy to look through it. And later, when knowledge ceased to be a crime, inventors and discoverers were driven still to work in secret by the tyranny of ignorance and neglect. Nothing is more terrible than the history of knowledge.

None of us can ever know how much of the joy of our lives was purchased for us by a heart-broken genius,

crushed by a world that treated him with scorn. There is a graphic letter somewhere from Robert Fulton, the first man to make steam navigation a success. "Never," says he, "did a single encouraging remark, a bright hope, a warm wish cross my path." A steamer launched in Scotland before Fulton's time was allowed to fall to pieces on a canal bank because the owners of the canal declared it would create a current that would wash away the banks, and Fulton built his first steamer amid scoffing on every hand. Even Napoleon derided him, and refused Fulton's offer to build him a steam navy—an act of providential folly for which mankind may be truly grateful.

It was the same with the beginning of railways. George Stephenson was branded as a quack, a fool, and a knave. Engineers sneered at him and went into the witness-box to declare against his schemes. Farmers were told that railways would prevent cows from grazing and hens from laying; noblemen were told that the poisoned air from the engines would kill their pheasants and foxes. Householders were told that their houses would be burned up by the fire from the engines, boilers would burst and blow the passengers to atoms, landscapes would be made bare and barren, and canals would be reduced to unused ditches. Even Wellington, after he had won the battle of Waterloo, was afraid of railways.

When London was first lit with gas Sir Walter Scott wrote a letter saying, "There is a madman here proposing to light London with smoke"; and one of the greatest scientists then living, Sir Humphry Davy, said: "Before you can safely use a gasometer you will want a weight as big as Primrose Hill to keep it down." That was the opinion about gas, and it reminds us of a greater wonder still concerning electricity, for there are men still alive



FOR AGES PROGRESS WAS FIXED BY THE SPEED OF A HORSE—NAPOLEON, FLYING FOR HIS LIFE
ACROSS EUROPE, CAME NO FASTER THAN CONSTANTINE HAD COME, 1500 YEARS BEFORE, WHEN
FLYING ACROSS EUROPE FOR HIS FREEDOM

who remember Michael Faraday, the greatest electrician of his age, declaring that the idea of electric light was the notion of a quack, to be classed with table-rapping and other impostures. His pupils have lived to see a mighty change, and one wonders what sort of lecture the immortal Faraday would give at the Royal Institution now if he could come back and see that little hall flooded with light in a twinkling by the touching of a switch.

Contrast the introduction of gas and steamships and railways with the invention of the aeroplane. Robert Fulton made his first ship friendless and alone ; George Stephenson was denounced as an impostor. Today our inventors work with the eyes of the world upon them, and with the applause of the world to encourage them.

It has taken hundreds of years to make men see that knowledge is good for the world, and with the awakening of the world to this truth has come the transformation of human life. Napoleon came to Paris from Waterloo in exactly the same way as Constantine had come to Paris more than a thousand years before. No improvement in transit by land or sea had come in all that time.

And it was not only in transit that the world stood still. For hundreds of years knowledge was locked up in libraries and kept in the minds of a few, and so, age after age, came nothing new to men. How often do we think that William the Conqueror never had a watch, that Queen Elizabeth never saw a telescope, that Shakespeare never read a newspaper, that Cromwell never saw a photograph, that Nelson never saw a steamship, that the Duke of Wellington wrote his despatches by candle-light, that Napoleon never travelled in a train, that Abraham Lincoln never spoke by telephone or switched

on an electric light, that Mr. Gladstone never saw a motor-bus, that John Ruskin never saw an aeroplane or heard of a wireless telegram.

We live in an age when a boy at school may know more of science than Sir Isaac Newton knew, when the poor man has pleasures that not long ago were denied to kings. And we, of all the generations that have ever been, are the first to live our daily life surrounded by inventions that abolish time and space.

Think what all these things mean. Let us imagine a man who has availed himself to the utmost of the advantages of modern science, and let us imagine him sitting at home on any night. He is reading a newspaper telling the story of the things of the day in all the countries of the world. A bell rings. He takes up a little black thing and listens. It is the voice of a friend two hundred miles away. A knock comes at the door. A boy hands in a written message from a friend a thousand miles out at sea. He reads it and sends his greeting back to mid-Atlantic. He picks up a book and reads what Shakespeare wrote; and then perhaps he may tire of his book, and he touches the switch of a little box, and lo ! a great choir is singing, or an orchestra is playing, or Madame Melba's Home Sweet Home comes into the room. He can have such a concert from that little box as has never been possible in the Albert Hall, with an array of singers and players such as has never come together in any hall at any time.

And then, when the music has stopped, he may darken his room, and have thrown on to a screen living pictures of the life of men in almost any country on the face of the Earth. He may take up the portrait of a friend across the world, and may listen to his friend's voice coming from a box. He may think of any subject,

and have a book upon it brought to him. He may pick up his wireless telephone and listen to a play in a theatre. He may take out his microscope and see the astounding sights in a drop of his own blood ; or witness the incredible energy at work in creatures invisible to his naked eye ; or bring within his vision the hidden wonder of a flower, an insect, or a group of atoms. It would take too long to think of half the wonder a man may bring into his life by availing himself of the impossible things of yesterday which have become the possible things of today.

It is difficult to conceive the benefit that these inventions will bring to future ages. They mean that knowledge can never be lost or hidden again. They mean that never again can power be kept in the hands of a few. They mean that the day is coming when it will be possible to form not only national but international opinion.

Let us suppose these things had been invented three hundred years ago. We should have been able to see Shakespeare conducting a play, and to hear his voice. We should have been able to sit in our room and see, thrown upon a screen, the living picture of Cromwell leading his troops at Marston Moor, and the execution of Charles Stuart in Whitehall ; we should be able to see the frightful horrors of the French Revolution reproduced before our eyes ; we should be able to see Napoleon in his rise and fall. We should be able to sit in our room and hear Milton and Sir Isaac Newton speak ; we could listen to the voices of John Wesley and Edmund Burke and William Pitt. We should know the truth about a thousand things of which history is in doubt.

So, we may be sure, will these things change the world in the time that is coming. Nothing seems impossible to an age in which we can talk into a box and make the

box talk back to us. Nothing seems impossible to men who can thrust their hand into space and bring back power, who can tap a message into the air and bid it go where they will.

We may be sure that the end of frightful disasters at sea is coming. Wonders are cheap today, and the miracle of wireless is losing its surprise; but we may doubt if ever the history of wireless will offer us a dramatic event more thrilling than the story of how the steamship *Baltic* rescued the passengers of the steamship *Republic* in mid-ocean when the wireless world was young.

The telegraphic operator on the *Baltic* was sending his messages home when the receiver recorded the distress-call from the *Republic*. The sinking ship was sixty miles away, drifting in a dense fog, and the *Baltic* changed its course and set out to find it. From half-past seven in the morning till half-past six at night the *Baltic* scoured the sea, talking all day long to the ship that was sinking with a thousand lives. All day on the sinking ship sat the telegraph operator, tapping, tapping, tapping into space a signal of distress.

Try to imagine the scene. A ship is sinking in a thick fog; a thousand men and women and children prepare to die. In a little room below a man is tapping at a keyboard, tapping into space a bitter cry for help. The air-waves set in motion by his tapping travel sixty miles, until they find, on another ship, a sympathetic disc on which they register themselves; and below, in the operator's room on this other ship, the mysterious tapping is repeated, and the ship's distress made known. Two other ships pick up the silent cry that trembles through the fog, and all day long three vessels pursue the sinking ship, with which they keep in touch by constant tapping,

by telephone bells at the bottom of the sea, and by communication with telegraph stations on land that have become aware of the catastrophe.

It is a thrilling thing to think of, these four ships drifting in a fog, talking to each other over miles of space, carrying along an invisible ocean new life for a thousand beating hearts. "We are sinking rapidly," says one message. "We can hear a bomb to the west of us; is it yours?" says another. Another ship asks the Baltic to "make as much noise as possible." The captain of the Republic thinks he hears a steamer's whistle, and appeals to the Baltic to hurry, for his ship is "sinking fast."

And then at last, after a whole day's search, steering and zigzagging for two hundred miles, the Baltic receives this message from the sinking ship: "You are very close now; come carefully. You are on our port side. Have just seen your rocket. You are very close to us." They were within a hundred feet; they saw the faint glare of a green light; and in two hours the sinking ship was emptied of its living freight.

We may well ask ourselves if familiarity with wonder is not breeding something like contempt within us. Too many of us live in the world as if it had no past, as if there were no future, and the wonder of life, and the majesty of man as the lord of life, are as nothing to these. It is true, unhappily, that there are still people who will not come to the window to look at the sunset, but give them fireworks! And even those of us whose imagination is not dead, who are not ashamed to stand in the street and stare at the stars, shut our minds too readily to the wonder of common things.

We strike a match and never think that we are setting free a bit of sunlight imprisoned in the earth before

the first man was born. We switch on the electric light without fear and trembling, playing like children with the appalling power of which science knows almost nothing. We open our papers in the morning as carelessly as if it were not a miracle that has brought to our breakfast-table the history of the last twenty-four hours from every part of the world.

And, as a penny brings us every morning the history of the world, so in every bookshop we can buy the thoughts of men. No longer in time to come will men dig with spades to read the story of other times on broken walls of buried temples, for thought travels around the world today and is set down for ever in imperishable books. We should handle books with reverence ; they are almost the only works of men that have immortality woven in their very being.

As man has invented writing to preserve and spread the thoughts of men, so, too, he has invented transit to bring together men themselves and unify the race. We move from place to place, at a speed that would have alarmed George Stephenson, as if it were as natural as walking ; and it does not occur to us that we are doing what the wisest men in the world must once have yearned to do in vain. How many of us have ever asked how it is that we can ride in a train at all ?

How many of us have thought that the power that drives a train is the same power that makes a violet grow ? If there were no Sun there would be no trains, because there would be no fuel ; if there were no fuel there would be no steam ; and if there were no steam there would not be the millions of specks of gas that bombard an iron plate so hard that it moves with force enough to carry a thousand people a mile in a minute.

Yet even the wonder of the train is passing, for men map out the country with elastic railways of their own, and trains that go from door to door. If you had asked George Stephenson if men would ever ride about the streets with engines of their own, he would have laughed, as other men laughed at his engine on rails. It is hard to realise, as we watch the swift procession of motor-cars in the streets today, that only a short lifetime ago motors were forbidden to appear in the streets unless a man walked in front waving a red flag.

Today there are millions of people in England independent of railways ; and in America the motor-cars are equal to giving all the hundred million inhabitants of the United States a ride at the same time. The story of the magic carpet has come true. I step on to the carpet on my hilltop in Kent, and spin through six English counties, past the door of John Bunyan's prison in Bedford, to the door of Shakespeare's birthplace at Stratford in Warwickshire. I rest at Stratford, and my magic carpet takes me to Oxford, with the glory of a thousand years of builders in its streets and Addison's Walk to walk in. I rest at Oxford, and the magic carpet carries me to Windsor Castle and the Great Forest, and back to Kent through London and the Strand. I have a railway of my own, with lines of elastic that will go wherever I will, with an engine that races time-tables and a carriage open to the sun. Yet not all the gold in African mines could have bought this carpet for me in the year when I left school.

And yet it seemed to me one day that the motor-car was an old-fashioned thing, for above my head a man was flying. It was Wilbur Wright, and it was almost the first time a man was seen to fly in Europe.

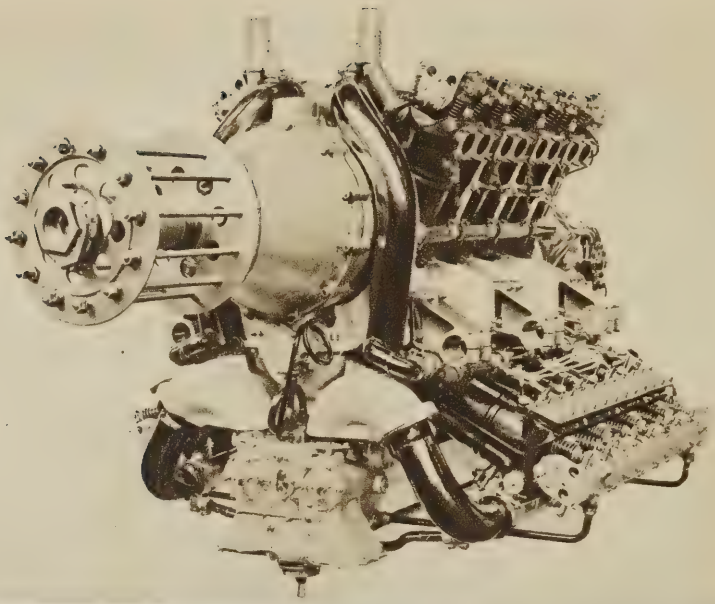
We might have been present at the invention of the railway and the steamship, perhaps, without realising the wonder of it, but it was not possible to stand at the foot of the Pyrenees watching Wilbur Wright fly like a bird and miss the thrill of it.

Think of it ! For millions of years a drop of oil has lain in the earth, crushed out of the marvellous life of ages past ; the hand of man brings it to light from its dark bed, so that it turns the wheels of the great world ; and at last a man pours it into a little engine, sits down beside it, and flies up among the birds. It is a bitter thing to reflect upon that the first chapter of the history of human flight is written in human blood, for the aeroplane came into a world not worthy of the heroism and brain-power that men had put into it, a world at war. Better that it were never invented than that it be used to take a war man into the skies to drop death down, to blow up houses, to send murder shrieking along the Earth.

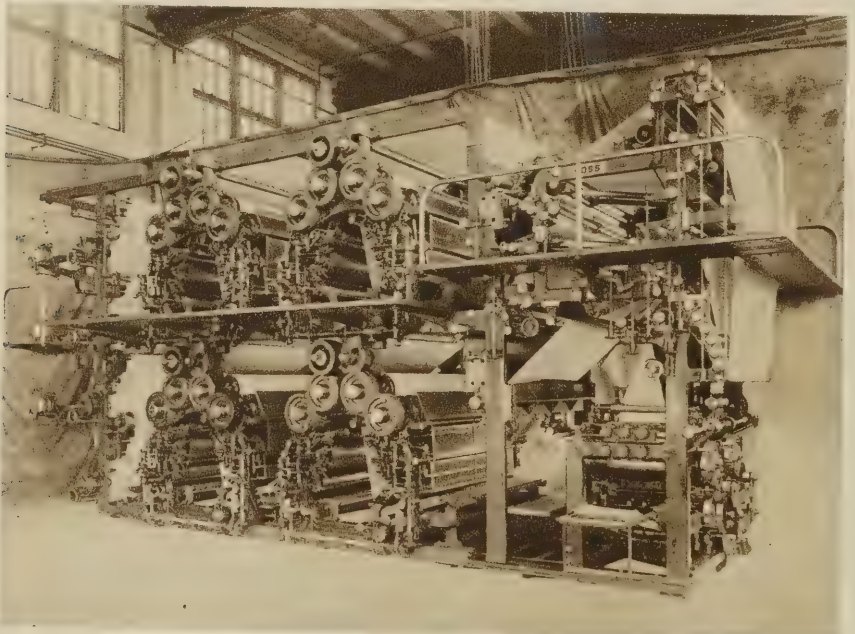
Yet who knows what uses this new power may hold for us ? We have lived to see men flying over our heads without making any sort of excitement, and it is hard to think what new thing in transit men will be able to make now. The motor-car and the aeroplane would seem to be the last word in travel—until that great day when man overcomes the law of gravitation. But it is dangerous to prophesy. The Postmaster-General in the time of Rowland Hill opposed a Penny Post because, he said, the number of letters would burst the walls of the Post Office ; and if we would have men laugh at us tomorrow as we laugh at him today we have only to declare a thing impossible. We are learning that nothing is impossible that the mind of man can conceive.



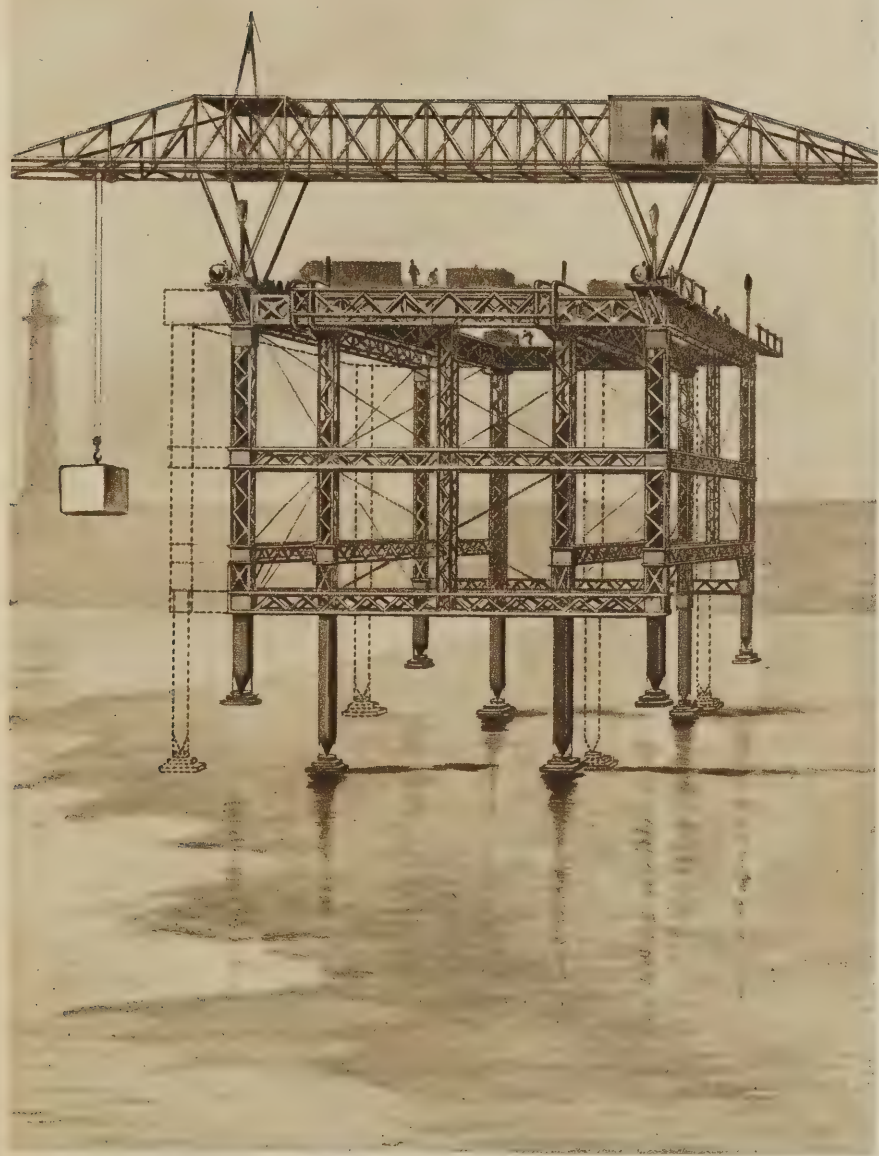
THE LITTLE WORLD MAN SENDS ACROSS THE SEA—THE MAJESTY OF A WHITE STAR LINER



THE THOUSAND HORSE-POWER NAPIER ENGINE THAT TAKES A MAN INTO THE CLOUDS



THE MARVELLOUS GOSS PRINTING MACHINE THAT TAKES A ROLL OF PAPER AND TURNS IT INTO A HUNDRED THOUSAND NEWSPAPERS IN AN HOUR



THE WONDERFUL MACHINES MAN MAKES TO DO HIS BIDDING—A MECHANICAL COLOSSUS
THAT WALKS TO ITS WORK



THE CONQUERORS OF DISTANCE—THE SUCCESSORS OF GEORGE STEPHENSON'S ROCKET IN
THE MODERN WORLD



THE RAILWAY ENGINE THAT MAN HAS MADE TO DO THE WORK OF THOUSANDS OF MEN

*What are they doing, all these people, this multitude
of toilers in our mines, factories, fields, and streets?*

WHAT THEY WERE DOING

THERE was a man who did not believe in the goodness of mankind. He believed that everybody was working for money. And so he lived alone.

But one morning in May he woke up with a feeling of delight. All about his cottage the plants and flowers were spreading their leaves in the sun, and the birds were singing. The magic of spring touched the heart of the lonely man, and moved him to go among his fellows.

He saw a farm labourer working in the fields.

“What are you working for?” said the man. “To earn a few shillings, I suppose?”

“No,” said the labourer, “I am making the earth grow corn for men to live on.”

He came to an old shepherd tending his sheep.

“What,” said he, “makes you sit out here in the wind and rain and cold? A little money paid every week?”

“Thousands of people have been warmly clothed from the wool of my sheep,” said the shepherd.

He got into a train.

“You don’t drive this for pleasure, do you?” he said to the engine-driver. “I suppose you work for money?”

“I work more for others than for myself,” said the driver. “I join the cities. I link country with country. I bring the nations together.”

He came to a crossing-sweeper outside the station.

“Trying to pick up a few coppers?” he asked.

“I keep the ways of the city clean,” the sweeper said.

He saw a clerk.

"Why do you drudge over a ledger for a miserable wage?" he asked.

"I am making war impossible," said the clerk. "I am uniting mankind in peaceful commerce. I am teaching men that friendship is best."

He spoke to a schoolmaster.

"Making money out of the children?" he said.

"I am teaching the children how to be happy and good and wise and useful," said the teacher.

He met an artist.

"Working for profit?" he asked.

"No," said the artist. "I create beautiful things."

He met a member of Parliament.

"What do you get out of Parliament?" he asked.

"I am helping to give people sweeter manners and purer laws," the member of Parliament said.

He met an editor.

"Why do you print all this stuff?" he said. "Because you are paid?"

"No; I make truth known to all men," said the editor.

"I make a record of today to guide men tomorrow."

He came upon an invalid.

"How miserable you must be," he said, "always tired."

"No; I am very happy," said the invalid, lifting up her hazel eyes. "I have books and time to read them. I have pictures and time to look at them. I have thoughts and time to think them. I have friends and time to see them. I have dreams and time to wonder if they will come true. And one day, by resting, I shall be strong."

A new feeling stirred within the gloomy man. He felt that all were working for the good of all. He sat down and closed his eyes, and saw the Golden Age.

*The boy in the street is running with the
papers, selling for a copper the history of
the hour and the history of the world.*

THE EYES AND EARS OF ALL MANKIND

THE marvel of the modern world is the newspaper. Nothing wonderful that man can make is made so quickly or is so much alive. The brains of all the world meet in it. The powers of earth and fire and water make it what it is. The toiling and straining and yearning of the heart and mind and soul of man are in every page of it. May we not say it is the greatest thing that man has ever invented ?

No man can exaggerate its power. It guides and directs and inspires the energies that carry on the world. It stirs men's thoughts and stimulates their purposes and kindles their enthusiasms. A paragraph in a newspaper may lift up the heart of the world any morning or plunge the world into bitterness and grief. A newspaper is like the beating heart of civilisation.

Nothing happens anywhere that does not come into the papers. Neither time nor space can keep it back. A man may be speaking at one side of the Earth and his words may be printed in a newspaper and sold in the streets at the other side of the world before he sits down. It is possible for a man to send a message from the skies and to read it in a paper when he returns to Earth.

There is no machinery anywhere so vast, so quick, so complicated, and so far-reaching as the machinery of a newspaper. It goes everywhere and touches everything. It engages the most amazing army of men ever summoned

together for a single purpose. They speak every language known to man, as they gather up the news of the world. They live by jungles and backwoods, on the edge of the wilderness and in the heart of the desert, in palaces and cottages and parliaments. They are rich and poor; they have had among them prime ministers and kings. This army of men who rule the world with their pens are masters of peoples and statesmen. They have their watch-towers everywhere. They reach from China to Peru; they are the eyes and ears of all mankind.

The newspaper is the masterpiece of democracy; it is interested in everything and everybody. Let a man steal a watch or carve a monument, and the newspaper will make a note of it. Let a man say something new, and it tells all the world in the morning. Let an idiot say he would rather see England free than sober, and it is blazed abroad as if lunacy were wisdom. It will tell us tomorrow what China is doing today. It throbs with love and hate, with honest things and infamies, with chivalry and tragedy, with bravery and pity, with things that lie too deep for tears and with delights that make us leap for joy. It is like life itself, and has as many moods.

It is the mirror of the world. Pick it up tonight and it will show you what has happened in the world since breakfast-time. It is the record of the life of every nation, the diary of the human race. It tells the story of the world from hour to hour and day to day, and it tells it wonderfully well, with emotion that stirs us as we read. It has come together from every corner of the Earth, from men of every land, with every kind of mind, and it has come to us from clicking telegraphs and spinning-wheels and the most bewildering mass of machinery

ever seen ; but it comes still throbbing and beating with life, still vivid and fresh, as near the heart of things as anything can be, the daily wonder of the living world.

It is an astonishing journey that a paragraph in a newspaper makes. President Wilson, let us say, sitting in George Washington's seat at White House, thinks out his Fourteen Points. A journalist puts them down, and in a minute or two the telegraph is clicking out the words. They come from America to Europe as fast as Mr. Wilson could speak them. It takes practically no time at all for the mysterious ether to carry its momentous message across the wide Atlantic. A minute or two may have brought the message from one continent to another. We will say the message is in London. Instantly it appears by telegraph on a magic paper roll in the newspaper office. You stand before a tiny printing machine encased in glass, which unwinds a roll of paper and prints the message on it before your eyes. No visible hand is touching it ; the power that makes the wheels go round is far away, but this wonderful machine brings the first news of events that are happening all over the world. It is like the voice of the world speaking into one little room, bearing tidings of good or ill. It is the universal recorder which, untouched and often unseen, registers the movement of the world. In the click of this machine the newspaper editor hears the first whisper of the day's events.

One summer's day, in a great club in London, a group of men were gathered round this little instrument, and none of them will ever forget the moment when the invisible power that works these wonderful machines printed six words before their eyes—*Lord Kitchener and His Staff Drowned*. It seemed impossible that if such

a momentous thing as that had happened, stirring the emotion of every freedom-loving man in Europe, cold type should register it so quietly there. Surely the type that printed words like these should leap from its place, and not lie there unmoved, mocking men whose hearts could hardly bear the thing it said.

That is what we feel about type ; it is so cold and still, yet it stirs our blood and sets us all on fire. Somebody has said that if a man gets a telegram saying, " Our son is dead," he is moved to sympathy ; but if the telegram says, instead, " Your son is dead," his heart may break. And yet there is only the little difference of a letter. All that the eye sees is a little more ink on the paper, yet it may mean more than we can imagine. Who can measure the effect of words like those of which Shakespeare said, " Here are a few of the unpleasantest words that ever blotted paper " ?

Such power have printed words over the mind that they may change a nation in a single day as truly as an earthquake. They can move a nation to laughter, or to scorn, or to burning shame ; and in these emotions roused by words nations will act and change the course of human history. And so we see at once that the man who gave the world the printed word gave it a power that men could never have dreamed of before then. In those early days of the world a man had no way of spreading his thoughts except by speaking them, or writing them with great labour. The few books that were produced at all were written by hand, mostly in monasteries by monks who toiled from morning till night, loving their work and making their pages beautiful to see. A book was then worth fully its weight in gold. Men would sell land and houses to buy books.

Now books have become the treasure of the poor, and every morning brings to us the printed story of the world. May we not give a thought sometimes to those who gave us the foundations of our books and papers? It was Gutenberg, a good German, who laid the foundation of modern printing in Europe five centuries ago—though it is said that China knew all about it before England was named. It was our good William Caxton who brought printing to England, and we may well raise our hats to this boy of Kent who grew up to send out, from his little printing office in Westminster, the first printed books in our English tongue. More than we know we owe to Gutenberg and Caxton, yet neither could have dreamed of the wonder that was to come, for centuries were to pass before a countryman of Gutenberg, the German Mergenthaler, took another step forward and gave mankind the linotype, without which we could not have the newspaper as we know it.

When Gutenberg was a boy, artists drew their pictures by cutting them in wood, and the wood blocks were inked over and proofs were pulled from them. Then whole pages of letters and words were cut out in one piece of wood, and it was Gutenberg who first of all hit on the idea of making separate letters.

He saw that if you had several alphabets cut out you could arrange letters as you pleased, and out of that idea grew the modern way of setting up words in metal type. Still the work was done by hand, and the newspapers our fathers read were set up letter by letter. A man would stand at a case with thousands of letters in dozens of little boxes, and before a newspaper could be printed scores of men must stand at these boxes, picking up perhaps a million pieces of type or more, all so precious

that they must be carefully collected and put back in their proper place.

For hundreds of years after Gutenberg this was done, and there was no other way of setting type until thirty or forty years ago. It was then that the clever brain of Mergenthaler worked out the idea of the linotype, the machine at which a man can sit and think "What a beautiful thing a rose is!" and set up the words in a solid line of type even as he thinks them.

He sits on a stool in front of it and taps down the keys, as on a typewriter. As he taps a key a letter cut out in brass falls down into a little space. The next letter slips beside it, and the next, and the next, until a line of letters lie side by side, all cut into brass, so that in another moment, when they are carried to a slot with white-hot metal pouring through, the metal runs into these tiny brass moulds and a solid metal line is made, with the impression of the letters on the surface. There may be ten thousand lines in a newspaper set like that, line by line, until the paper is complete and the paragraphs can be put into columns, and the columns into pages.

Yet wonder upon wonder is to come before we have our paper. The paragraph lies still in its place in the column, locked with perhaps six other columns into a page with about a thousand solid metal lines. You can pull a few proofs from a page like that, but the lines would slip about and the metal would wear out if you tried to print a million, and the page must be converted into a solid metal mass. It is passed through a mangle with a soft sheet of paper, so that every letter on the page is impressed upon the paper. The paper is shaped to fit the round roller of the printing machine, and thus it

reaches the newest product of the inventor's brain that has reached the newspaper world. It is called the casting-box. The paper matrix is put into it, and in forty-five seconds the casting-box delivers the page in solid metal, rounded and trimmed and bored to fit exactly in its place for printing. It comes out so hot with its rapid transformations that it must be cooled in water instantly, and as it is cooling duplicate plates come out in the casting-box at the rate of four a minute. So hundreds of metal plates come from this box, ready for those great machines on which they are to fit close and tight while rolls of ink and paper pass over them and multiply their impressions a hundred thousand times an hour.

Our paragraph has found its way at last into the heart of what is perhaps the most astounding piece of machinery that has ever been set up. The great printing machines, which stand like rows of cottages, are truly among the gigantic achievements of our time. A far greater business is the setting up of a printing machine than the setting up of a house. It is like a palace of industry in itself. At one end is a colossal roll of paper, four or five miles long, which travels through this vast machine at the rate of ten miles in an hour, and drops out in its proper place exactly as you buy it. This machine unwinds the paper, prints it, cuts it, folds it, counts it, all at the rate of thousands every minute. It is the mechanical miracle of our mechanical age.

The whisper of the news on the little machine in its glass box has become the mighty shout of a paper with a million voices. This news is to be printed on a million separate sheets of paper, and it must be done at once. If you can imagine Cheops thinking out the Great Pyramid, and ordering his hundred thousand slaves to put it up

before the morning, it would not seem a more bewildering task than this making of a newspaper in a single night. Compared with the making of a paper the building of the Pyramid is ridiculously simple.

It has been said of the linotype that it almost thinks. It is in itself one of the great mechanical wonders of the world. But we value it most of all, not for its own sake, but for the work it does, for it makes possible quick and cheap printing, and of printing we can say that without doubt it does more to shape and rule the world than anything else on Earth.

It is true to say that there is nothing in the daily round of the world that can compare with the stupendous achievement of a newspaper. Night after night it is produced, its energies pouring from the ends of the Earth, to be gathered up in one room, put through a hundred processes, passed through machinery seeming almost human, and reproduced in an hour or two for any man to read in the remotest corner of the countryside. How many thousands of men must work in order that this can be! What is the incalculable sum of horse-power that must be expended! How many millions of money must be used to make it possible! It is beyond imagining.

We begin to understand, perhaps, something of what a newspaper means, and well may we pause, as we pick it up lightly, to reflect on the amazing story of this daily record of the world. We should be proud of it. It is the noble product—the ignoble product, perhaps, sometimes—of the physical and mental energies of thousands of men. Neither kings nor governments can do without it, and in it the myriad peoples of the Earth find the sure shield of their liberties.

*The train draws near to streaming London. We
are in sight of the great river, Father Thames.*

HOW THEY MADE THE BED FOR FATHER THAMES

No story of any river can outmatch the glorious story of the Thames, for it is largely the story of England. London is what it is because of a river. The millions of streaming London are all children of Father Thames.

There is something almost mystical in the fact that London is at the centre of the land surface of the globe, making us wonder whether Nature did not take special pains with this central spot of Earth millions of years before a human being appeared to inhabit it. It fills us with romantic thoughts that this desolate spot should have been lying unknown in the western seas when the empires of the East were in their glory.

What would the merchants of Tyre have said to one who predicted that their grandeur would fade and a grandeur greater than their dreams appear out of a mist on the river-banks of an unnamed island?

The centre of the Earth kept its secret for thousands of years. Babylon lived as if no greater power could rise among men. The glory of Athens seemed the crowning glory of the ages. The massive strength of Rome looked as lasting as the stars. Down to the last years of the Roman Empire the unnamed river of England washed the centre of the Earth with the deep tides of ocean, biding its hour, and none dreamed yet of its greatness.

The first name given to the centre of the Earth was Llyn-Din, which means the Hill by the Pool. We see in imagination a tribe of prehistoric men choosing that hill because the river there made a wide pool and acted like a moat to the huts on the hill. But the centre of the Earth kept its secret for long ages after that, though it treasured its first name.

In the days of the Saxons, Warwick, Stafford, and Winchester were chosen as chief cities, and York, Cambridge, and Lincoln were great centres for the discharge and loading of ocean-going ships. London was a place of no national grandeur. But, in spite of Saxons and Romans, Old Father Thames worked away with his tides, and London became a merchant city at last.

Now, before we go any farther, consider this strange fact. The Mediterranean is a tideless sea. Therefore it may be regarded as one vast dock. How is it, then, that the greatest port in the whole world is found sixty miles up an English tidal river instead of in this ancient and tideless sea? Sir Joseph Broodbank, who has been fascinated from boyhood by the Thames, has set himself to discover the reason for London's strange pre-eminence as the market of the world—the great clearing-house of all nations, and his reason for it all is interesting. He points out that London is about sixty miles from the sea, "about the distance an ordinary steamer can cover while the incoming or outgoing tide flows." This comfortable distance from the sea has a very important effect on trade. It is far enough inland to be safe from enemies; it is not so far inland as to make transhipment for another voyage difficult. Transhipment is easy, too, because the Thames is so broad and deep that a vessel of twenty thousand tons can go up to a dock three miles from London Bridge.

Very important is this business of transshipment to the greatness of London.

It means that along the Thames there rise up the grey warehouses in which you may find produce from every quarter of the Earth. Merchants from every country visit London, study the samples of those goods lying in our docks, and bid for them in the public sales. In this way goods from the West Indies, which have paid rent for lying in London warehouses, are once more put on board ship—generally an English ship—and sent across the ocean again.

Think of what this means in wealth. We have the foreign merchant and his clerks coming to London in vast numbers. We have thousands of dockers continually going between ship and warehouse. We have the staffs of the warehouses. We have the staffs of railway companies and carting companies. We have a vast business at banks and insurance offices. We have double work for our seamen.

Just before the war London's wool trade represented a sum of £25,000,000, equal to about half a crown for every pound of our national expenditure. Yet practically none of this wool remains in London. Two-fifths go away to foreign countries, and the rest to our manufacturing centres in the North. London is the world's wool market, but the wool simply comes up the Thames to be sold. Much of it is clipped on the other side of the Earth, and London has nothing to do with it beyond selling it to other nations.

The wonder that springs to our minds is this—that this central market of the world should have formed itself on the banks of the Thames, and well may we ask the reason why. The answer is found in the character

of the river, and here we reach something of a mystery. The more we think about Father Thames the more do we feel that Powers other than our own have been working for its glory.

At the time of the Saxons the Thames was a sluggish river which overflowed thousands of acres in Kent and Essex. The Romans had done nothing to alter this. They seldom used the Thames; their favourite route was across the Channel to Dover. As for the Saxons, they had little interest in London, and the wide, slow-moving river was an excellent piece of water for their shallow boats. But after the Conquest England's relations with the Continent were closer, and far more friendly. People from those countries often visited England, and liked it so well that many of them settled in the island. Among the Flemish were many agriculturists who had solved in their own country the problem of water-logged land, and it was these Flemish farmers who laid the foundations of London's greatness.

These good people began to build banks to keep the Thames out of their gardens. To them this daily invasion was an act of destruction, and for the sake of their crops they fought Father Thames with their spades. They flung up earth in the form of walls which not only kept the sluggish water from washing away acres of produce, but confined it in a narrower space.

Now see the wonder of all this. The river was no more slow and sleepy—Old Father Thames woke up. He came up at full tide with a force so great that he scooped himself out a deeper bed, and, on his way back to the sea he carried with him the soil he had dug, thus dredging the river free of cost. For six hours each way, moving at a pace of nearly four miles an hour, the old

creeping Thames, now a tenth of its former breadth, scoured the river-bed and flowed with force far inland, so that big ships could sail well into London, and there discharge their cargoes in perfect safety.

Nor was this all. The rescued land afforded room for a vast population, and crops were grown there which enormously helped the trade of London, for when the idea of wharves and warehouses took shape, and when, instead of discharging their cargoes into barges in mid-stream, the ships of modern times looked out for docks, there was the rescued land on either side of the Thames waiting for them—waiting for nearly a thousand years !

The Flemish farmers had laid the foundations of the London docks. Not only did they give England a mighty river which did its own dredging, but they prepared the land for docks and warehouses which have become one of the wonders of the world. Does it not seem as if powers beyond the powers of men were working for the future of London ?

The water is back over many acres of that rescued land, but it is now walled in with stone, great buildings rise on every side of those smooth watery enclosures, and against the solid walls lie the greatest steamers man can build, bringing for storage the produce of the Earth.

So Father Thames was made the river that it is ; so London became the city that she is ; so the secret of the centre of the Earth is out at last, and we see in it once more the mysterious unfolding of events that through all the ages of the Earth has moved ceaselessly and purposefully onward to the completion of that Divine Event to which the whole Creation moves.

*High over London, as we cross the Thames
into the greatest city in the world, stands a cross
of gold, crowning a glory that was once a dream.*

THE NOBLEST THING THAT LONDON HAS

AN almost incredible thing is a thought. It comes into the mind from nobody knows where ; it goes out into the world again to nobody knows where.

And who shall measure it on its way—the good or the harm it does, the multitude of people it sets thinking ? It may steal into the mind of a man and change the course of his life ; it may bring into being some movement that will rouse a nation to a mighty act. There was once a man who thought slavery was wrong, and he lived to see America cut in two. But he lived, also, to see her united and strong again, all the stronger, all the more united, because of his thoughts, which had grown and sown the seed of the Civil War and made his country free for all, home of all men “ created equal.”

So, through all the history of the world, a thought has been more powerful than swords and guns. A sword can be destroyed—its work is brought to naught, it settles nothing in the end. But nothing can destroy a thought—its work goes on throughout all time, it can never end and never perish.

But the thought we are thinking of now is not a thought in a book, not a thought that spread like fire through the minds of men ; we are thinking of a thought that came one day to a quiet man. It came to him that he would give to the Future a glorious thing to see, a solemn thing to look on, to which generations of people



CHRISTOPHER WREN RETURNS IN HIS OLD AGE TO LOOK ON THE SCENE OF HIS LABOURS



THE STONE AGE MAN ON THE BANKS OF THE STREAM WHICH FLOWED LONG AGO WHERE
THE THAMES NOW RUNS

should look up and say: "How beautiful a thing that is!" And so he set up the noblest thing that London has, the lovely dome of St. Paul's, high above the din and roar of streaming London, high above the flowing Thames; and, as we look into the sky and see this spacious dome, with the golden cross above it glittering in the sun, it is good to think that what was once a thought in the mind of a man has been, is now, and let us hope will be for centuries, a call to the human throng that presses about it to lift up their hearts and take courage.

Let us see how this thought made its way in the mind of a man; how the dream of Sir Christopher Wren made the noblest thing in London.

It was in the autumn of 1632, sixteen years after the death of Shakespeare, that there was born down in a little Wiltshire rectory a son to Charles Stuart's chaplain, Dr. Christopher Wren. The child was so delicate that it was thought unlikely he would survive the perils of infancy, but he struggled through that first hazardous period of human life, and arrived at a teachable age, though so fragile that to send him to school would have been almost surely to send him to his death. So the boy grew up at home in an atmosphere of culture, and he grew daily stronger, and at last went to Oxford.

There he became famous in a day, and John Evelyn makes a record in his diary of having seen at Oxford "that miracle of a youth Christopher Wren." But in what way was he a miracle? He was a miracle of learning in mathematics and anatomy. If you had asked him to explain to you the difference between a Norman window and a lancet window, he would, perhaps, not have been able to satisfy you—this youth who for two hundred years has reigned like a king in the realm of

English architecture, and whose noblest work is the everlasting landmark of London. St. Paul's, that incomparable achievement of human genius, was the work of a man who never gave architecture a thought, so far as we know, till he was a famous professor of science.

It is curious, too, to reflect that we might never have seen that dome looming against the clouds, and that cross of gold flashing in the sun above the clangour of the City's din, but for a thing we should now regard as a piece of "jobbery." Wren was Professor of Astronomy at Oxford when some friends who missed his society in London conspired to get him appointed Assistant Surveyor-General under Sir John Denham. This Denham was a poet, who gave hardly a thought to the buildings of London, and Wren might have had as easy a post as his master if he had not inherited from his ancestry a very honest notion of duty. He accepted the office, grateful for the opportunity of rejoining his scientific friends in town; but he attended to the work of his office with praiseworthy diligence. Here, for the first time, he came to love architecture, though to this lover of the stars, this dreamer in the infinite kingdoms of mathematics, it can hardly have been a new world. New world or not, Wren entered it as a king.

The first building to which he gave his attention was a Gothic building at the top of Ludgate Hill, which had fallen into ruinous neglect and was wholly unfit to top the hill above the River Fleet. Wren wrote a report on it in 1663, proposing alterations which practically meant rebuilding the crazy edifice, whose immense tower had become a danger to the houses below. He was met by a clamour of abuse, for this building he proposed to pull down and rebuild was none other than St. Paul's

itself. In the end he was beaten, and the cathedral was patched up. He built like a poet, with the unerring accuracy of a mathematician, and with every step in his progress he dreamed a great dream for London, little guessing that disaster was waiting to bring it true.

In 1665 the Great Plague came to London and Wren was persuaded to flee. He proposed to himself a trip to France and Italy, but got no farther than Paris, where he found the old Italian architect Bernini busy on the Louvre. So enthralled was Wren by this building that he haunted the place, peeped over Bernini's shoulder, memorised his plans, and wrote home: "I shall bring you almost all France on paper."

A few months afterwards the mighty city of London was little more than a heap of dust and ashes. The Great Fire had followed the Great Plague. It looks to us as if Fate itself had kindled the fire, and swept it over the wooden city in order that Wren might build for the British Commonwealth a capital worthy of English achievement, for he was appointed Surveyor-General for the rebuilding of London. It must have seemed to Wren that now the great hour of his life had struck.

Like a poet inspired he drew his plans. St. Paul's was to dominate the City. Round this central shrine were to be gathered, in a wide-sweeping circle, the principal buildings. All the narrow alleys and lanes were to be swept away. Broad streets were to radiate from this glorious centre. The Thames was to be banked from Blackfriars to the Tower, with handsome squares standing off the quays, each with a church and a garden, all burial-grounds being removed outside the City. The Fleet river was to be purified and made into a navigable canal. A great square was to hold the halls of all the City

Companies, grouped around Guildhall. Everywhere would be piazzas and squares, with pleasant trees for shade, benches for rest, and glorious architecture for observation.

Never did one man dream a finer dream, a dream of the noblest city in the world. It stirs imagination even now, yet it was shattered by the ignorance and prejudice of those whose glory it would have been. The mightiest genius of the age was treated by feasting aldermen and petty councillors as if he had been a labourer. His plans were thrown aside. One thing only was left to Wren—the building of St. Paul's.

That noble building, the central glory of the central city of the world, is the wreckage of one of the sublimest dreams that ever came from the aspirations and courage of man. Not only is it the triumphant survival of one of the noblest dreams ever broken, but almost every stone was raised against a hindering hand.

The story is told that, as he looked about him at the fallen masonry of old St. Paul's, Wren's eye caught sight of a stone on which was inscribed the word *Resurgam*, *I shall rise again*. He made this stone of good omen the first stone of the new cathedral, and many times he had need of faith in its motto to carry him through. For he was hindered on all hands, pestered by authority, opposed by ignorance; and, though he was paid but six pounds a week he had trouble in getting his wages and the wages of his men. A tax on all the coal which came up the river was set aside for the cost of the cathedral, fire being made to pay for what fire had destroyed; but Wren had more difficulty than can be believed in getting this revenue before it had fallen into the slippery hands of Charles the Second.

For a whole generation, in an atmosphere of dis-

appointment and hostility, Wren toiled at the great cathedral, often so feeble that he had to be carried to the top of the building in a basket. His dream of a noble city was blown to the winds, but he went on, doing his best.

When you are cast down and disheartened, look up to the dome of St. Paul's, and the memory of Christopher Wren will bid you lift up your heart as well. To the end of his days—and this delicate child lived to be ninety-one—Wren went once a year to look at it, and there he would sit, gazing on the monument his courage had built.

How often he must have thought of the many generations who would visit the great place when he himself had passed beyond this world! How often that little, fragile old man must have lifted up his heart to God, praying happiness for all who entered this cathedral.

Truly that prayer has been answered, and for ages yet to come England will be a better place for London's vast cathedral. High up above the greatest city in the world rises its cross, looking down on the glorious dome, down below that on the spires and turrets and towers that rise up toward the sky, down below these on a moving multitude of people coming and going, going and coming, in a procession that never stops. It is the highest thing in London, and the most uplifting, a lovely thing for London to look up and see on a summer's day when the cross is ablaze with gold.

It shines down on London, meaning something, let us hope, to the millions who pass by. It looks down upon them all, and seems to say to the busy city setting out in the dawn, to the weary feet going home at dusk:

*Come unto Me, all ye that labour and
are heavy laden, and I will give you rest.*

*Above the streets of London a man is riding
in the clouds, but no bus stops, no boy looks up :
the dream of yesterday has come true and is old.*

THE RIDER ON THE CLOUDS

NEVER did things change so fast as now. Your grandfather's father may have seen a little steamship struggling along a canal or lying abandoned on its banks. Your grandfather saw a railway train which came pushing proudly into the world at twenty miles an hour. Your father saw a motor-car riding the roads like a giant of power at a mile a minute when the driver let it go. But you who are at school have seen a thing that clever men and wise men hardly dreamed of years ago ; you have seen a thing that wise men scoffed at even when you were born—you have seen a motor-car riding through the clouds.

Perhaps in all the history of the world there has been hardly anything equal to that. Think of it in any way you like, and it must seem to you a miracle. Throw a stone up into the air, and it falls down ; throw a stream of water up, and it comes back to earth ; throw a feather up, and, although it floats a little while on the wind, it glides back to the solid earth and lies there like a stone.

They fall, all of them, by what we call the law of gravitation, which means that the Earth pulls everything towards its centre. A pebble rolls down a hill ; water runs to the lowest point. It is the pull of something in the mass of the Earth that draws all things towards it as a magnet draws a needle. It will pull a flint out of a chalk bank if we give it time ; it will pull down an over-

hanging tree if it is left long enough without support. This universal power of matter to attract other matter to it, the larger mass attracting a smaller, is one of the mysteries that no man understands.

And yet, as I sit writing this on a hilltop in Kent, a motor-car flies past a mile above my head, so high that it looks like a bird, so beautiful that it looks as if Nature herself had made it, so confident of its power as it passes out of sight that it thrills a man to feel he belongs to the race that made it. Now it is a speck. Soon our eyes will lose it, but we know that a man is up there, and that he is going on and on and on.

It is not the first kind of thing that has taken a man up in the clouds. There have been balloons and there are airships, but the flying motor-car we call the aeroplane is far more wonderful than these.

The balloon and the airship are lighter than air, and they sail on the sea of air in which we live as easily as a ship sails on the sea of water in which the fishes live. Remember that air is something very real. It is so thin that we cannot see it, so fine and colourless that we can hardly believe it is there. It is as real as the chair you sit on, and it has weight as water has, strength as water has, power to bear things on it as water has. When you fly a kite it is sailing on air ; it rests on the air beneath it, which is trying all the time to push it up.

A thing that is lighter than the bed it lies on cannot sink into its bed. Put a feather on a feather bed and the bed will remain undisturbed, but put a piece of iron there and the bed will give way to it. It is so with water. A feather is lighter than water, and will float ; a piece of iron is heavier than water, and will sink, but if you take a basin made of iron and rest that on the water,

the basin will float because it has much more water to rest on and is not so heavy as its bed.

And so, if you beat a mighty sheet of iron into an enormous basin, it will still float, because as long as it is filled with air and rests on an enormous stretch of water it is lighter than that great body of water. Even if you put heavy engines in this iron basin, and fill it with people and thousands of tons of all sorts of things, it will float like paper on the sea, so smoothly that sometimes it will go a thousand miles, and a glass of water would not slip off a table with the rocking.

So an iron ship sails, though it weighs a thousand tons. So an airship sails with its heavy engines, with its crew of perhaps twenty or thirty men, all held up by an enormous bag of gas, which, even with the load that hangs on it, is lighter than the bed of air it rests on. The airship and the watership have gravitation on their side; that is to say, they rest on something heavier than themselves, and gravitation does not pull them down; they sink naturally into their bed. But the aeroplane has gravitation against it, and it must fight all the time for its life.

How does it do it? How does the great weight keep up there, heavier than the little air it rests on?

There are many ways in which we could explain it, but most of them are difficult to understand unless we go into the laws of physics and into mathematics. One of them is simple, however. Throw a stone as hard as you can, and, though gravitation pulls it down, it will fly through the air as long as the force you put into it remains with it; then it will fall.

But suppose the force you gave the stone should last a minute, or an hour, then the stone would go on and on,

because the force that drove it straight would be strong enough to tell against the force of gravitation that was pulling it down. There is no reason at all why a stone should fall, except the pull of the Earth; and if a stronger pull or push sends it another way it will go that way.

Well, the engines of an aeroplane give it the power that we give to a stone, and they keep it going all the time. They turn a screw, and the screw draws the flying chariot behind it. Take a screw and drive it into a piece of wood, and it will carry into the wood anything that is fixed behind it. Put a big screw on a ship and drive it into the water, and it will carry through the water the ship and all that is in it. Put a screw in an aeroplane and drive it into the air, and it will carry through the air whatever is fixed behind it.

The propeller is the screw. It screws its way through air as real as wood and water. Run as hard as you can, and you will feel the air is resisting you. On the calmest day you can make a little gale of wind for yourself and run till you feel that you are running against a wall. The air resists the propeller of an aeroplane, but it screws its way exactly like the screw of a ship or the screw in a piece of wood, and the aeroplane must follow where the propeller goes.

Remember that air is real, that it is matter as much as a stone is, and the thought of an airship riding on it, or an aeroplane screwing its way through it, will be easier to understand. The flying motor-car cannot stand still like a ship that rides on its great air propeller, but as long as its engines drive this propeller round it will screw its way through, and the marvellous things that control its wings will send it up into the clouds or bring it slowly back to earth. Its way is not always smooth. It is

bumpy at places, like the Dover road in war time ; there are hills and dales for it to cross, and suddenly it may fall a hundred feet. But ninety-nine times in a hundred it will right itself with perfect ease ; and the control of man over his new highway has become one of the greatest triumphs of all time.

Is it not the opening of the last amazing chapter of the abolition of time and space ? Think what time and space have meant to man ! Life for the first men was as quick as a man could run ; nothing moved any faster. Then, as time rolled on, man tamed a fleeting creature of the wilds, and on the back of a horse he speeded up his little life from day to day. On the back of his horse he swept across the continents.

It was the horse that made possible the conquests of those ancient empires that loom so large in history but are so small in fact. Caesar and Alexander, Charlemagne and Saladin—where would their glory be without the horse ? Through century after century the life of the world rolled on as fast as a horse could run.

It is one of the startling things that fix themselves in the mind as a man looks back through time. Years grew into centuries and centuries became millenniums before man got down from his horse and found anything faster to ride on. When Alexander rode out with his armies to find more worlds to conquer, it was on a horse. When Caesar marched back from his triumphs to Rome, it was the horse that took him to the glittering Forum. When Constantine fled from an emperor's palace and rode across Europe to Paris as fast as he could go, he chose a horse to ride on because it was still the swiftest thing in all the world.

Time brings us to King Alfred's day, and it is still the horse that Alfred rides. The Conqueror comes, but he has conquered nothing faster than a horse. Shakespeare put a girdle round the Earth in forty minutes, but there was nothing on the Earth to take him anywhere faster than a horse could go. And still it was the horse that carried Napoleon when he burst upon Paris from Moscow with the dread news of his doom. From Alexander to Napoleon came no quickening-up of speed; even the Victorian Era opened on a world in which the quickest moving thing was still the horse that savage man had tamed. For hundreds of thousands of years the movement of the world was fixed by the movement of a horse's legs.

Think of that, and then think of another hundred years. We see a boy sitting by the fire watching the steam lift up the kettle lid. It had happened a million times before, and the wisest men on Earth had watched it; yet never had the truth dawned on men's minds. And it was not till just beyond the memory of living man that steam was used to turn a wheel and carry the world along the road.

Nothing was done worth speaking of, indeed, until long after Waterloo, and there are men still living who remember the frightful spectacle of that first train which dashed along at thirty miles an hour. Man had never moved so fast before.

So steam came into an incredible world, bringing speed with it. It was only thirty miles an hour or so, but it made a mighty change, for it enabled men to cross the Atlantic. No more were they at the mercy of tempest and wind, tossing between Europe and America for sixty days. The steam that turned a wheel on land could turn

a wheel at sea, and it is odd to look back to those great days when an excited world was waiting for the news that a steamship had crossed the Atlantic. It must have been more thrilling then than flying across is now, for the world had waited long, and sensations did not come to it every morning.

Brunel's Great Western, which made this first steamship voyage across the sea, cut down the voyage to fifteen days, and it must have seemed a startling thing to that slow old world. It upset a host of doubting Thomases, for the steamship had been derided as the railway train had been, and the most illustrious scientists in England had declared that steam at sea was utterly impossible. Now, at last, a steamer had crossed the sea both ways, and men rubbed their eyes and wondered what would happen next.

What happened next was that the Atlantic was crossed in an instant by that electric power just dawning on the world. A marvellous thing it seems, as we look back now, that men even then should have had the imagination to make a cable from England to America, using wire enough to reach from the Earth to the Moon.

Twice this mighty cable broke as they were laying it, once owing to a man who bungled a brake; and a third time it narrowly escaped destruction by a whale. But the courage of those men with the vision of linking continents was equal to the overcoming of all disaster, and after years of labour the cable was laid and the first words were tapped out in the Old World and instantly heard in the New.

Man had sent his signal across three thousand miles of ocean in an instant of time, and the electric bridge across the Atlantic has been followed since then by that

invisible bridge in the ether along which our messages, or even our voices, now run without the help of the cable lying in the ocean bed. Sitting in a room in London we may talk to a friend sitting in New York. It is one of the supreme achievements, a thing before which Aristotle and Shakespeare and Sir Isaac Newton would have stood bewildered and aghast.

And now it is followed by another conquest still. Columbus crossed the Atlantic in seventy days; our steamships cross it in five, but the flying man can cross it in one. We have come to the million-year-old story of the Atlantic Flight. Yes, a million years old.

Once upon a time there was no water flowing between Europe and America; a man could have walked across the thousands of miles that divide us from the great Republic of the West. But no man trod the dry path that led from Europe to America. Man came upon the Earth too late to use it, and in time it disappeared.

Those sleepless powers that Nature used for her purposes, the mighty forces of heat and cold, of sun and wind and rain and tide, the fiery furnaces within the Earth, the contracting and expanding of the rocks of which the Earth is made, the stupendous weight of millions of tons of earth always pressing down—all these things were at work throughout the ages, and in the end the pressure of things was too much for the bridge of land. It sank lower and lower, and the time came when the waters of the Atlantic rolled in its place.

But Nature has her mighty plans. She works from age to age and accomplishes her purposes. Nothing is haphazard. She sows the seed today and in a hundred million years, it may be, the fruit will come. The mind of God is from everlasting to everlasting.

And through all these ages in which bridges of land and gulfs of water have been changing places, in which the pressure of natural processes has split the Earth into continents, the pressure has been doing other things.

What was happening in those distant ages is that, deep down in the earth, the buried vegetation of age upon age was being pressed so that the natural oils came out of it and formed for themselves colossal reservoirs in the depths beyond the reach of men. So oil was formed, and now we see how Nature was preparing for the Atlantic Flight, for from these reservoirs came petrol, and from petrol came the wondrous engine that lifts man to the skies. So that, though the land bridge sank beneath the sea, Nature's invisible builders were preparing then for the bridge of air that should take its place.

The longer we live the more certain we are that the world was made for us. Man comes into the world and finds that all is ready for him—coal and petrol and light and ether are ready to his hand. Marvellous it is that a drop of petrol from the depths of the Earth should lift us to the skies, and more marvellous than all it is that these powers lie all about us waiting for our use.

So Nature works with Man; so Man must work with Nature. The Earth is made for him, its powers lie all about him, and he has but to seize his opportunities to make this world a garden for us all.

*They have found the finger-print of
Andrew Scarlioli on a window, and now
they know who stole the forty pounds.*

THE TOUCH OF A FINGER

THE way of the transgressor is hard. He writes his doom with his own finger now. There will soon be no chance for a thief at all. All Nature is against him.

The fate of an evil thing is written in all the annals of the past ; it must perish. Only the best remains. Only the thing that is worthy of the glory of this world can endure in the end.

Life marches onward to its destined purposes, along its destined ways ; and it has been ordained that, as day follows night and the stars move in their courses, as a blade of grass lifts itself up and the lark sings in the heavens, so the tip of a man's finger shall rise up against him if he swerve from the path laid down. There is something for us all in this warning finger of Andrew Scarlioli. Nature has her many voices, but her message is clear and plain to all who can understand. From the beginning of the world, since life began at the bottom of the ocean, she has been moving forward to better things. She has never been satisfied ; she has made her masterpieces, she has wrought such glory as the eyes of man can only wonder at, but she has never said, " It is finished." She goes from step to step ; she builds up storey after storey ; she climbs to the stars and beyond them. Life lives for ever in the morning, and for her there is no night.

To thoughts like these a finger-tip can lead us. You have not thought, perhaps, for all these years, how the

tip of a man's finger has been building up a new hope of justice on the Earth. Let us look at it a little while.

We all know poor people who imagine they can read our fortunes in our hands; but those who know anything worth knowing know that the creases in the hand have less to say of a man's character than the creases in his trousers. Yet if you will look at your hand closely, especially if you look at it through a magnifying-glass, you will see that the skin is not smooth like glass but in little ridges, and it is these ridges of the skin, whatever their mysterious purpose may be, that have come to the aid of human justice. You can look at them and think how like the tiny furrows of ploughed fields they are; or they will remind you, perhaps, of the little ripples on the beach after the tide has been and gone, and the sun is pouring down on the sands again. Some day when you are in Piccadilly, if you will run into the Geological Museum, you will see sand ripples made by the waves millions of years ago, there today as they were left by the tide before the first child was born. Nature, for ever and ever changing, has powers of preservation and persistence that stagger us to think of.

It is this thought that lies in a finger-tip, for the incredible truth about the tip of your finger is this—that it will never change the pattern of its ridges while you are alive, and the pattern of its ridges is different from the pattern of the ridges of all the fingers of all other people living. We live so fast and read so fast that we have hardly time to realise the wonder of things that lie about us, and we must make haste to see how this uniqueness of the finger-tip has come to matter in the world.

Those who study finger-tips will tell you that there are four main types, which they name according to the

loops, arches, and other patterns of the ridges in them. But no two finger-tips have ever yet been found exactly the same. We can easily see, therefore, that if we can take a print of a man's finger-tip we have a certain means of identifying him, and the time will come, no doubt, when the finger-tip of every child will be taken at its birth. The pattern never changes; and what can be more natural than for every child born into the world to make its mark in some indelible way, so that every State could have a scientific guarantee of the identity of all its people? It is natural that men should have been slow to hang a man, or even to convict him, on the evidence of his finger-tip; and it is good to remember that the adoption of this scientific aid of Justice is due to British persistence. As far back as 1858 Sir William Herschell became interested in the idea, and he fought hard to introduce the system first of all into a British Court of Justice; but it appears that the actual public origin of the method was a letter sent to *Nature* in 1880 by Dr. Henry Faulds, an Englishman who shares with Sir William Herschell the credit for devising one of the most precious instruments of Justice known to men.

In the days when Sir William Herschell held a great post in Bengal, the manager of a tea garden was murdered there, a despatch box was broken open, and a hundred rupees were stolen. Among the papers in the box was a calendar, and on its light-blue cover were two brown smudges. They were the impressions of a man's thumb. In the Police Office in Bengal were thousands of finger-prints, and one was of the finger of a servant of the murdered man. He was hunted down hundreds of miles away, blood-stains were found on his clothes, and in the end it was found that he had knocked his thumb against

the calendar while searching the box for its hundred rupees. And that touch of his thumb was the proof of his guilt. There was a burglar in Hammersmith who helped himself to a glass of wine before he left his host, and a finger-print on the glass convicted him. There were two men in Deptford who touched the tray of a cash-box, and left a mark which hanged them both. There was a Camberwell man who was arrested on suspicion of murder, but could not be found guilty because his finger was inflamed. But the finger healed, and the ridges told their tale, and he was hanged. And there was another man in London who clambered one night up a ten-foot gate with a row of spikes across the top, stood on a cross-bar, and held a spike to steady himself as he jumped down. But as he jumped a ring on the little finger of his right hand caught on the spike, and the man hung there till the finger came off. It was picked up, an impression of its tip was taken, and it was like the finger-print of a man well known to the police. He was found, and his right little finger was missing !

We can see what all this means. A hundred thousand cases have been proved in the English courts with the aid of finger-tips, and Scotland Yard has hundreds of thousands of prints of people's fingers. In India they have a million, and there this system of identity has for years reduced the heavy work of the courts. All military and civil pensioners in India must have their finger-tips printed. All people registering a document in India must fix it with a finger-print, and there can be no question of identity when the print is produced in court. In many ways in India, with its vast distances, these finger-prints are a mighty aid to justice ; and everywhere in the last few years the practice has spread wide.

Such things grow—the difference between life and death itself may grow—out of the difference between finger-tips. You would have said, perhaps, that two finger-tips were as much alike as two peas; but, then, there is a world of difference between two peas. Life, the more we think of it, seems more impossible. It has come, men say, from a little speck which was once like the point of a pin, down in the dark depths of the sea; and from that speck there has arisen the incredible variety of living things we know. Life has two great branches—the marvellous kingdom of plants which grow up out of the earth and remain where they are born, yet by a thousand ways spread themselves and cover the earth; and the animal kingdom, which lives on plants, and moves about and wanders as it will, and finds in man its master and conqueror and king.

And in either of these kingdoms, if we think of it for a minute or two, we can think of a thousand different types, or of a million, and any one of these is so wonderful that a man may spend his life in studying it, and may die before he understands its mystery. So vast, so varied, are Nature's kingdoms. Yet, of all the marvels we find as we travel in these kingdoms, can anything be more amazing than the fact that no two finger-tips are quite alike; that wherever you find two things that seem alike you will find, if you look closely, that they are as different as—*two peas*?

The persistence of life and its universal change—that is the marvel of marvels, and we come back to the truth that all through her changes Life is building better and better. More life and more complete is her great purpose, and all her changes have in them the secret of progress. The tendency to change belongs to all things. It is

Nature's way. All living things spring from a common ancestry. In the beginning we are tiny cells, too small for the eye to see. The cells feel, move, feed, grow, and build up structures—in the plant they build up the stem, the root, the sap, the leaf; in the animal they build up bone and muscle and nerve and blood. The secret of these vastly different things is hidden in the cell that lies beyond our sight. In two cells that seem alike lies the beginning of the difference between a spider and a Polar bear, an elephant and a moth, an oak-tree and a blue forget-me-not.

Nature goes on making and changing all the time, and she makes no mistakes. Never by any chance does an elephant's cell become an ox, or the cell of a daffodil become a willow tree. Nature maintains the type; the family persists; men are always men, roses are always roses, wolves are always wolves. But between man and man, and rose and rose, and wolf and wolf, there is always change, and no two are quite the same. Some little change in structure turns the scale. Luther Burbank grows sixty-five thousand kinds of blackberries, and at last he grows one without thorns. It takes a man a lifetime, and we think of it as a wonder; but that is what Nature is always doing. Life covers the Earth, generation follows generation, and in the course of countless years little changes here and there begin to tell, and it is the best and fittest that goes on.

So that the message of the finger-print—which remains fixed for each of us but is never alike in two of us—is this: that all things change, and that we must change with them. We must move onward and upward with the march of Things and Time.

*The taxi takes us past a little Methodist chapel,
keeping the memory of good John Wesley green.*

THE PLAIN MAN ON HORSEBACK

IF we look at the portraits that were painted long ago, or at the statues that were put up then, we find that the world thought much of the soldiers and the politicians and the beauties of the drawing-room, and not very much of this plain man who was riding about England on his horse; and yet John Wesley was breathing into our race a power that would keep it alive when the fighters and the talkers, the battle and the tattle, were dead and gone.

For what are empires without men? And what are men without this power that plain John Wesley scattered abroad for fifty years in the cities and hamlets of our land? Without the seed John Wesley sowed, men and nations perish like the weed.

There never was a life like his. He was the first of all the Methodists, and he was surely the greatest Methodist who ever lived, for he lived for nearly ninety years, and ordered almost all his days so that not a moment should be lost. Every morning for fifty years he was up at four o'clock; every year in the prime of his life he rode eight thousand miles; every week for years he preached a hundred sermons. He kept a diary for more than half a century, and there is no more human document anywhere.

He rode on his horse through England a distance of a quarter of a million miles, as if a man should ride ten times round the world. More than forty times he crossed the Irish Sea. He crossed the Atlantic not only before

flying machines were thought of but before the first balloon. He went to America when the voyage lasted sixteen weeks, when the sea broke over the ships so that as he stepped from his cabin door the force of a tide struck him and stunned him, and left him feeling that he would not lift up his head again till the sea gave up its dead. The sound of the sea breaking over the ship was to him like the sound of cannon, and the quivering motion of the ship was like an earthquake.

And yet, in days of travel such as that, this man like a human engine crossed the North Sea on a missionary tour to Holland when he was eighty years old ; and he was nearer ninety, and within seven days of his grave, when he preached the last of his forty thousand sermons.

There never was a man who worked harder than he. He wrote grammar-books and histories ; he compiled a dictionary ; he knew five foreign languages ; he made about thirty thousand pounds by publishing books, and gave it all away. He read poetry as he went along on horseback. If he was kept waiting at a ferry, instead of standing and swearing he would sit and write a tract. He knew all the little roads and the places they led to. He went over moors and heaths and through mountain passes ; he rode through fords and rivers and floods, and neither the burning heat of the day nor the darkness of the night could stop him. He preached wherever he found men and women to listen—in barns and parlours, halls and mansions, and outside cottage doors.

Busy as we are in these days, there is no man whose record can beat his, and for every follower he had in England when he died there is, somewhere in the world today, a church. Was ever a monument like this to any other man ?



THE PLAIN MAN ON HORSEBACK—JOHN WESLEY TALKING TO THE VILLAGE FOLK ON HIS
RIDE THROUGH ENGLAND

At the door of a Picture House a horse comes galloping, and we can hardly help remembering the wonderful witness of the kinema to the galloping horse.

TRUTH COMES OUT

THERE is no end to the wonder of this world, nor is there a beginning. If we go back as far in time as we can trace the hand of man we find such marvels there as surprise us even now. Think of those astonishing pictures which the men of the Stone Age painted on their walls.

They were painted by the men who saw the mammoth passing by; they are seen today, fresh and beautiful, in the earliest picture galleries of the world. They are thousands of years old, and have been found chiefly in caves in France and Spain. The pictures were unseen in these caves through all the centuries while Egypt and Babylon and Greece and Rome were rising to fall again. Not a hand disturbed them through all that time. Not a breath of wind reached them; so still is the air there that the smoke of a cigarette will perfume the cave for days.

There are many things to learn from these old pictures on the wall, but what we notice most is the faithfulness of these men who drew the pictures. No artists ever had before them such a mighty panorama of animal life. These men must have loved to make pictures of the great creatures that shared the world with them, but most of all they loved the beauty of the reindeer and the horse, the grace of the chamois and the stag. They drew their portraits faithfully and well, and they did what may seem incredible to you. These men whom nobody knows, working in the darkness of caves perhaps a hundred

centuries ago, with no training in art save what they gave themselves, with no generations of experience to guide them, would paint a running horse more accurately than ninety-nine in a hundred artists in our time.

When these pictures were first found men would laugh at the comical things about them. "Look at the legs!" they would say. "Did ever a horse run with its legs like that?" And so men looked at these pictures and thought them quaint, and often beautiful in their lines and curves. "But who," they said, "could expect savages so long ago to draw a perfect horse?"

Well, the world moves on, and man moves with it. Man has found the secret of a thousand things. He has made ships and trains and telescopes, telegraphs and telephones, and in the last few years he has filled the world with moving pictures. A mighty gulf of time there is between the kinematograph and the men who drew these pictures in the caves, but think of this—that the kinematograph, which has made it possible after all these centuries to photograph a horse as it really runs, has shown us, for the first time beyond all doubt, that *the men in the caves were right*. They drew their pictures properly; they knew the ways of a horse better than we do; they saw with their own eyes what we, with all our knowledge, had to wait for the kinematograph to teach us.

A man draws a horse on a wall, and wise men laugh at it when ten thousand years have passed; but the artist in his cave would point to his horse with pride if he were back today, for the kinematograph has proved his work. The kinema is the greatest picture-maker in the world, and the picture-maker of the caves, if only he were here, could call it as a witness that he did not lie.

*Out of the silence of space a voice comes suddenly.
A man is speaking in the clouds. Now it is a song
that Herrick may have heard three centuries ago.
Now it is Faust from the Opera House. The supreme
wonder of the working world is the wireless telephone.*

THE VOICE THAT RINGS THROUGH SPACE

SLOWLY men are capturing the invisible powers that lie behind the world. They are learning to control the atoms of matter of which the universe is made.

We must get out of our minds once for all the idea that matter must be a thing that we can see. There is matter we can see and matter we cannot see. We can see a piece of stone quite easily ; we can see a piece of glass less easily ; we can see a cloud of dust less easily still ; but we cannot see the air we breathe, though it is matter, too, in every sense. The gases that make it up are matter, and we can take them and separate them and compress them and make them a solid thing. Realise that the air you are breathing could be made into something to sit on, and your mind will be ready to understand the wireless telephone.

We live and have our being in an ocean of matter, matter thinned out so much that we do not notice it. When we speak this matter moves ; every word from our lips sets it moving in ripples, as the surface of a cup of tea will move if you blow it. These movements are always the same—that is to say, two sounds that are exactly the same cause exactly the same movement in the air. It is so always and everywhere. Each sound has its own sound-wave ; whether it was made by the first man clanging two stones together, or by Kubelik on his fiddle, or by an owl crying in the night, the same note will send the same wave.

The telephone is possible because men can take up these waves with wonderful instruments and can reproduce them when and where they will ; wherever the wave is reproduced the sound that made it is reproduced too. The gramophone is possible because men can not only catch these waves, but can cause them to make a groove in a cylinder which, when a needle passes along it, recreates the waves and gives off the sound again.

We must get into our minds, therefore, the idea that, if our eyes could see everything that exists, we could see sound as well as hear it ; we could see waves of sound as we see waves of water. But the truth is that the matter of the air is so thin that our eyes cannot grasp it. What we can do is to control the invisible electrons that make it up, and set them to work for us, and when we use the telephone we are controlling these electrons and harnessing them to carry our words where our own voices cannot reach. It is for all the world as if the electrons were horses and our words were chariots, and as if we sent them to a distant friend.

It is important to remember that, as there are thousands of sounds, so there are thousands of sound-waves, and that each wave goes on its journey and arrives safely. It travels with a thousand others, yet does not get mixed up, and so wonderful are these waves that they can go across the sea in a great company and any one of them at its journey's end is recognised as easily as we recognise a friend.

Yet the only difference between these waves is in their frequency. All sound is caused by something hitting the matter in the air as we hit a table with our hand, and the difference between one sound and another is due to the rate at which these blows are given. We all

know the difference between low sounds and high sounds, between bass voices and treble, between the low roar of a bull and the high squeak of a bat, but we do not all realise, perhaps, that the difference is due solely to the number of air-waves in a second, or the frequency, as we say. If we strike the middle C on a piano we set a string vibrating so that it makes 256 return journeys in one second—this note will always make that number of vibrations, and the waves it sets up are always of exactly the same length.

It is one of the laws of the universe, fixed and unalterable. The vibrating string sets the air about it vibrating at exactly the same rate, and the 256 waves reach out 1100 feet in one second—unless, of course, there is something, like a wall, to slow it or to stop it. Each of these waves is, therefore, a little over four feet long. A higher note will cause the string to vibrate more quickly and there will be more waves, but the sound will still travel 1100 feet in one second, so that the waves will be shorter. *Short waves, high sounds ; long waves, low sounds* is the rule, but the distance covered by a sound in a single second is always the same. It is always 1100 feet, except for slight changes due to temperature.

We have now come to understand that speech is a movement of matter in the air : a word is simply a chain of waves reaching out and dying away at the rate of 1100 feet a second. The business of the telephone is to catch the moving waves ; if we let them stop it is too late, but if we can pick them up before the wave is broken we can save the sound and carry it on. That is what the telephone does.

Inside the mouthpiece of the simplest telephone is a metal disc, held in its place by a magnet ; it is in a

magnetic field, as we say. When we speak into the telephone the air-waves strike the disc and cause it to vibrate, as the string of a piano vibrates when we strike a note. The disc, when vibrating, is now nearer to the magnet and now farther from it, and this affects the strength of the magnetic field—that is to say, the pull of the magnet is stronger and weaker as the disc vibrates ; or, in other words, the words we speak are made to affect the magnet. Round the magnet near the disc is a coil of wire, and the movement of the disc generates an electric current which changes its strength exactly as the strength of the magnetism changes.

All that is necessary now is that the same process should be reversed at the other end of the wire, and this is done. The electric current affects the distant magnet, the magnet affects the disc, and the vibrations of the disc make up another chain of air-waves exactly like those we sent into the telephone at this end. That is how the telephone takes our words, makes them into an electric current, and builds them up into words again.

But we have gone too far without understanding half the miracle. The telephone is really a great victory over Nature, and we must see what it actually does.

Nature carries a sound on an air-wave—if we may put it so—at the rate of 1100 feet a second. If we could move as fast as that we should think it quick enough, but it is not really fast as things run in the universe. The electrons that carry sounds are really among the laggards in Nature. Light flies a million times faster, and the Earth itself moves inconceivably fast compared with it. Every year the Earth takes us on a ride of four hundred million miles through space—about as far as twice to the Sun and back. The mind can hardly grasp

such speed, but it is easy to grasp the rate at which sound moves, and it is not difficult to imagine that one of these days men may almost catch it up. Look at it in this way.

A man can run about 15 feet a second.

A train can go about 80 feet a second.

A motor-car races at 170 feet a second.

An aeroplane flies about 290 feet a second.

Sound waves travel 1100 feet a second.

Electric waves go 1000 million feet a second.

It is curious to wonder if the day will come when a motor-car may even catch up the speed of sound, and to think that if ever it does so the motor-car will be on us before we hear it : it will keep pace with its own noise !

Dizzy a speed as that would be for a motor-car, we have only to think for a moment to realise how slow it would be for a telephone. If our voices were loud enough to speak to anywhere without an instrument, our words would travel 750 miles an hour. It would be a quarter of an hour before words spoken in London could reach Paris or Glasgow, forty minutes before they could reach Berlin, and two hours before they got to Moscow or Constantinople. A word would take three hours to get to Jerusalem, seven hours to Tokio or Cape Town, over thirteen hours to Sydney and fifteen to New Zealand, and sixteen hours from Pole to Pole.

We begin to see how slowly sound travels, and we are now face to face with the wondrous miracle the telephone performs every time we speak into it. It picks up words travelling 1100 feet a second and harnesses them to a chariot which carries them *a million times as fast*.

This miracle is accomplished by changing sound-waves into electric waves, which travel at the enormous speed of light itself. It is as if the invisible powers changed

horses, taking a word off a slow horse trudging along at 750 miles an hour, and setting it to ride on the back of Pegasus himself, sweeping through the universe at the rate of 186,000 miles in a second.

We have seen how this is done in the mouthpiece of the telephone, but, wonderful as this is, it is one thing to work with power imprisoned in a wire and quite another thing to work with the invisible power existing in space. We can all understand how a wave dies away ; we have only to throw a stone in a pond to see it. Along a wire a wave can be controlled, though even here it will lose its strength through friction, and will at last thin out and die if left alone. But these little waves set going in England and ordered to go to America—how are they to be picked up at their long journey's end ?

An ordinary electric wave, even though it travelled with the speed of light, would no more reach across the sea than a wave caused by a pebble would reach across, and so men made electric waves of enormous energy. They set up huge aerials to project these waves into the ether at a great height. Still there were tremendous difficulties in the way. The energy given off by ten thousand cells, surging up and down the aerial a million times a second and agitating the ether all round it, sends off its waves in all directions. Only one stream of this was needed, but this one stream, like all the others, would thin out and waste and spend itself so that in those early days, when it reached its journey's end, it arrived too feeble for any instrument to pick it up.

We have only to think of the wonder of the eye and its sensitiveness to light to realise the problem that was waiting to be solved ; it was like trying to catch hold of something as delicately sensitive as the eye's response

to light. Long ago, before many of us were born, David Edward Hughes, a clever English scientist, found these wonderful electric waves in space, and discovered that they travel with the speed of light. But wise men thought him wrong. Professor Huxley and the President of the Royal Society both thought he was mistaken. It must have been a trick of his instrument, they said, that had misled him. And so the poor professor, who had walked through Great Portland Street in London night after night hearing wireless signals, long before any other man had heard them in the world, was discouraged and gave up his experiments; and the wireless telegraph and the wireless telephone were kept back nearly half a generation. No man can say what the world has lost for want of a little encouragement to David Edward Hughes. We may be almost sure that if he had gone on the wireless telephone would have been so perfect that possibly, let us say, the Titanic need never have gone down.

Years went by, and another scientist, the clever German Dr. Hertz, found that Professor Hughes was right. He took a bit of wire and bent it into the form of a broken ring, not letting the two ends meet, and then he sent an electric current through the air and tried to pick it up. A spark flew across the gap in the ring. Yet even Hertz did not realise what had actually come true. As others did not believe in Hughes, so Hertz could hardly believe in himself. He did not dream of it, yet it was actually true that the seed of wireless telegraphy was sown at that moment. The existence of electric waves in space was proved.

It is not surprising that even the discoverer of these waves should have failed to understand the power that lay

behind them. He had found electric waves, but he did not dream that we could harness them, and it was merely one more interesting thing to know about the universe. It was interesting to know that these waves travelled through space in numbers varying from thirty thousand to three millions in a second, varying in length from three hundred to thirty thousand feet, and travelling with the speed of light at a thousand million feet a second ; but it seemed improbable, and it did not occur to Dr. Hertz, that any use could be made of these silent movements in the invisible ether that runs through all things.

It was a great step forward, however, when the aerial was made, generating a mighty rush of current which sent its streams in all directions ; and it was another step forward when electric waves were sent out five miles long. It is easy to see how much more controllable 1000 five-mile waves must be than 5000 one-mile waves or 50,000 shorter waves, but even mighty waves like these will die away. Man had not yet found a thing so sensitive as to pick up these electric waves, thinned out to almost nothing after their journey through hundreds of miles of space. The man who could have made the human eye to pick up hundreds and millions of light-waves in a twinkling—to pick up 400 billions of one kind and 500 billions of another kind and 600 billions of another kind as in a flash, and to recognise one as red and one as yellow and one as blue—could perhaps have made an instrument that would have picked up these waves that were fading away, and revived their strength before it was too late. Unfortunately, the man who could make the human eye was not available.

But all through human history the hour has brought the man, and at last came the man who could pick up



DAVID EDWARD HUGHES LISTENING TO WIRELESS SIGNALS IN GREAT PORTLAND STREET
IN THE DAYS WHEN NOBODY WOULD BELIEVE HIM



THE INVISIBLE ELECTRIC FORCES THAT ENVELOPE THE GLOBE—HOW WIRELESS STATIONS ARE COVERING THE EARTH

this energy before it died away. He was Edouard Branly, a Frenchman born at Amiens, and we may smile today at the simple way in which he solved the problem that had baffled human skill so long. A child might have done it. Most children have played with a magnet and a few metal filings, and have seen the metal filings run together in a heap as they come into the magnetic field. That is what Professor Branly made them do, but he had no magnet, and he relied on the invisible waves. He took a handful of metal filings and put them in a glass tube, running an electric wire into them. But the current would not pass through the filings, which lay there unmoved *until the wireless waves arrived and acted on them*. Then the filings drew together in a heap and the electric current passed through.

It was now possible to carry an electric current across the sea and reproduce it thousands of miles away; it was possible to make the current control the needle that tapped out the dots and dashes of the Morse code; it was possible, therefore, to send a telegram.

But even now we were a long way from the telephone, for a wide gulf separates the instrument which will click a needle and the instrument which will reproduce the human voice. A little thought will enable anyone to understand why.

The current that will move a needle will not necessarily reproduce the voice. Even now that this is done it seems almost incredible that the human voice—perhaps the most subtle thing we know, next to the flash of an eye—should be recognised thousands of miles away. It is true that the brain remembers a voice it has known in years gone by; it is true that it will recognise a voice it has not heard for fifty years; it is true that it will

remember all those years the things which make one voice different from all others. That the brain can remember these things is a miracle, but that man can make an instrument which will pick them up, throw them across the Earth for thousands of miles, and re-create them in some distant land in the twinkling of an eye—that is surely enough to stagger a multitude of infidels. If there was never a miracle in the world before, we have seen one now.

For that is what has been done. One great day during the war, on September 29, 1915, a man spoke in New York and was heard far off in many places without the aid of any wires, and was heard not hundreds of miles only but thousands of miles, not over land only but over sea, not only in places where the hearing was expected but in places where men could hardly hope it would be heard.

Picture a room in New York, at the office of the American Telephone and Telegraph Company, in Dey Street. The president of the company is speaking into a telephone. "Hullo, Carty, this is Mr. Vail," he says. Carty is in San Francisco, 2500 miles away, and no wires connect them, but he hears Mr. Vail, and says, "This is fine! This is wonderful!"

It was fine indeed, and truly wonderful. It was one of those events which language fails utterly to describe, to which Shakespeare himself would probably have been unequal, and would merely have been able to say, as he said once upon a time, "O wonderful, wonderful, and most wonderful wonderful, and yet again wonderful, and after that out of all whooping!" And yet that was only half the marvel of that September day, for as the day drew to its close news flashed across the Earth that the voices of these men had been heard in other distant

places. Not only in San Francisco, the western gate through which America goes out to the East, had the voice from New York been heard, but at San Diego, 2300 miles west of New York, at Darien in Panama, 2100 miles south, and—more wonderful than all—this human voice, travelling from a street in New York, had been heard by a lonely engineer sitting in a wooden hut on Pearl Island in Honolulu, five thousand miles away in the midst of the Pacific Ocean.

The imagination leaps at the thought of the man who spoke and the man who heard—the speaker at the hub of the Western World in the very heart of the continent that never sleeps, and the listener in a little hut on a lonely island thrown up by fire from the bed of the Pacific Ocean. Imagination leaps, also, at the thought of that other listener to this same voice, who sat far off in Darien, for we think of another great day in that lonely place, where long ago a man stood on a peak and discovered the Pacific Ocean. There it was that Francis Drake climbed up a tree and saw the Atlantic and the Pacific, too; and the mind goes back to those days now, when once again Darien stands out like a great peak in the Alpine heights of human knowledge and achievement. Oft has man travelled in the realms of gold, but he has lived through few hours more dramatic than that in which a lonely man sat in a room and listened to a voice two thousand miles away, like proud Balboa

when with eagle eyes
He stared at the Pacific, and all his men
Looked at each other with a wild surmise,
Silent, upon a peak in Darien.

Within three weeks of this great day in New York the wonderful telephone men had spoken from America

to Europe. On October 20, 1915, they rang up the wireless men on the Eiffel Tower in Paris, and for the first time words spoken in America were heard in Europe. The Eiffel Tower was not equipped with a transmitter for replying, but the voice was acknowledged by wireless telegraph. It is thrilling to remember that, vital as the Eiffel Tower then was to the armies of the Allies, all military use of the tower was suspended by the French Government while this experiment was made.

It is not easy to imagine where wireless will lead us, but there are few human achievements that so stir imagination. The fact that a man can speak around the world must make a momentous change in human affairs.

It is not a wild dream to imagine that a man in England may speak to a friend in Australia as the one is at breakfast and the other at supper; an odd experience it will be then to rise with the Sun and wish our friend in the Antipodes Good-morning as he goes to bed! How often, in the darkness of night, we think of the coming dawn; but now, at last, the night will hear the morning's greeting, for as we rise at dawn we shall greet our friends across the Earth under the setting Sun.

Wireless waves, electric currents, radium—how they meet us everywhere about the world! Yet they are part of a world no man has seen; they belong to the invisible powers behind our world of Shadows.

THE GATE OF A NEW EARTH

THE visible Earth is nearly all explored. Men are exploring now the invisible world that lies on every hand.

Slowly the veil is lifting from the invisible foundations upon which this world rests, and the invisible world, with all its powers and hopes for the future of mankind, is revealing itself to the human mind.

The progress of our knowledge of electricity and magnetism, the two invisible forces that influence our lives in a thousand ways, is the most striking piece of exploration of this unseen world, and its value is plain to all. It seems only the other day that the lives of hundreds of people on a burning ship were saved by means that none of them could see or understand. An invisible force, which our five senses cannot detect, carries a cry for help for hundreds of miles over lonely and stormy seas, and hundreds of passengers on a sinking ship are rescued.

The same invisible force is now used in another form for saving life in our hospitals. It is turned into an unseen ray which enables the doctor to see what is going on inside us. The X-ray and the wireless telegraph are both forms of the unseen energy which runs our trams and trains, drives our machines, makes chemicals for us, helps to drive our motor-cars and makes it possible to send an aeroplane faster than a bird can fly. We are, in fact, in the Age of Electricity, the most wonderful of the new forces of the invisible world.

But electricity is not the only power of the invisible world in which we live. Science has found that man is almost blind. He cannot even see many objects in the broad sunlight, for men have taken the sunlight and broken it up by passing it through a prism of glass, which spreads it out into a rainbow band of colour. This colour is in light, yet man cannot see it.

Our eyes can see only a little ribbon of colours with long bands of darkness stretching away at both ends. Both these long, dark parts of the band are composed of real sunlight : one is a part that acts on a photographic plate, the other is the part that acts on an instrument for measuring heat. But our eyes can see neither of these parts of ordinary sunshine, because our optic nerve does not use this part of light. We are surrounded by invisible forces—strange, glorious colours we cannot see, delicate perfumes we cannot smell, sounds we cannot hear, and powerful things that our sense of touch cannot feel. Yet the things in this invisible world are of more importance to us than the things we see.

At present our wise men are only on the edge, as it were, of the new world of invisible forces. They grope, they guess, they fumble, but they cannot tell us much about it. A scientist in these days is like a child in a fairy tale, wandering through an enchanted forest. Somewhere in the depth of the forest is the treasure of invisible power. If it is found it will abolish poverty from the world. But the seekers after this treasure never boast that they will find it ; all they can do is to work on in hope, amazed at their ignorance of invisible things, yet joyful at the unknown fields of adventure before them.

The story of wireless is the first chapter of the opening of the gates of the invisible world ; the story of the

X-ray is another. It was in 1895 that the X-ray was discovered, as by chance. At that time many men of science were interested in certain experiments with a glass tube. The glass tube was emptied of air and connected with an electric battery, so that a discharge of electricity could be sent through the glass tube. Sir William Crookes was the first man to produce a really high vacuum in the tube, and he obtained an astonishing effect. Just a little air remained in the glass, and when the electric current jumped from one side of the tube to the other it created a ray out of the rarefied particles of the air. It was a visible ray, and Sir William Crookes maintained that it consisted of *matter in a radiant state*. Many German men of science thought the ray was merely a ray of light. Professor Röntgen of Würzburg was among these.

One day his table was in great disorder. There was a vacuum tube on a stand, and close beside it was a book the professor was reading, with a metal key in it used as a bookmark. The professor was an enthusiastic photographer, and some of his plates were scattered about the table. By one of the happiest chances that ever happened in the world the book with the key in it happened to be on the top of one of the plates.

The professor spent some time in sending currents through the glass tube and studying the results, but he could get no new idea from his experiments, and he thought he would clear his mind by going for a walk and taking some photographs. He picked up all the plates he could find on his table, and then, seizing his camera, went out to take photographs. When he developed his plates he found that one of them was spoilt by *the shadow of the key he had put in the book*.

So far all was accident, but the professor felt that he

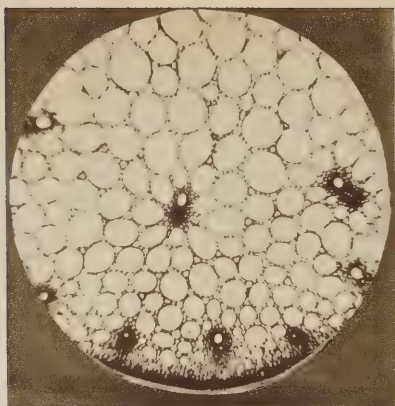
was on the edge of a new world of mystery. He began by putting everything back on the table as before. He put the key back in his book, placed the book on another photographic plate near the vacuum tube, and then sent an electrical discharge through the tube. Then he developed the plate and found the photograph of the key again revealed. It was now clear that he had hit upon an unknown ray which had the power of penetrating a book and influencing a photographic plate.

In great excitement the professor called a few students and planned a series of researches. For some time the strange ray remained invisible. Something unseen shot out from the glass tube during an electrical discharge, and penetrated sheets of metal, pieces of wood, and human skin, and left on a photographic plate the clear, dark outlines of nails, or bones, or other things it could not shine through. Happily, the professor had a curious screen which had been devised for studying certain forms of light. It was coated with certain chemicals which made invisible rays of light—what are called ultra-violet rays—into visible waves of light. When this screen was placed near the vacuum tube, it glowed at each electrical discharge. A student placed his hand between the screen and the tube, and the bones became visible through the flesh! The X-ray was discovered! Another pathway had been made into the invisible world.

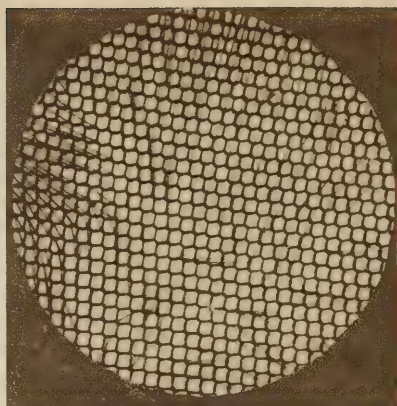
The X-ray has become the lantern of the world of unseen forces. In some cases it has led men astray, but their wanderings have brought them to still stranger sources of power. A French man of science, M. Becquerel, thought the X-ray was probably a form of radiant matter, and began to search for other things that shone with an invisible light. He started by using a photographic plate.



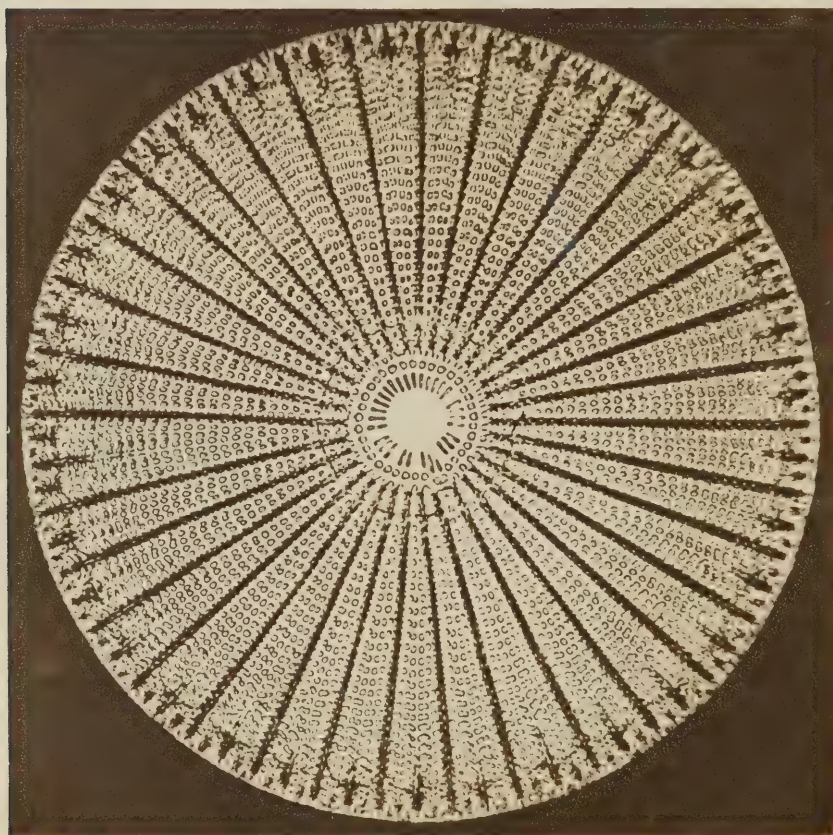
ONE OF THE MOST INCREDIBLE THINGS EVER SEEN IN THE TELESCOPE—THE PATH OF SHINING
LIGHT ROUND SATURN, 40,000 MILES WIDE AND 500,000 MILES ROUND, MADE UP OF MILLIONS
OF MOONS



THE STALK OF A WATER-LILY
UNDER THE MICROSCOPE



THE LENSES OF THE EYE OF A FLY
UNDER THE MICROSCOPE



ONE OF THE MOST INCREDIBLE THINGS EVER SEEN IN THE MICROSCOPE—THE
MARVELLOUS BEAUTY & DELICACY OF STRUCTURE HIDDEN IN A PLANT INVISIBLE
TO THE NAKED EYE

Each plate was placed in a box with some metal or other substance, and the box was carefully sealed and set in a dark cupboard. It was soon found that certain forms of matter emitted an unseen radiance—something that could not be seen with human eyes but affected the chemicals on a photographic plate, even though a sheet of metal or wood covered the plate. It was also discovered that this dark light was connected with electrical energy. So an instrument for measuring electricity was used instead of a photographic plate, and Professor Curie and his wife offered to undertake the laborious task of tracing the source of the strange light that came from a substance called pitchblende. They broke a piece of this up into its elements, using all sorts of devices to get rid of the stuff which did not make their electrical instrument work. Gradually they obtained a small quantity of a new substance which showed great electrical power, and at last they were able to announce to the astonished world the discovery of Radium.

If the X-ray is the lantern of the dark, invisible world, we may look on Radium as the key of its secret door. It contains many sorts of power, each manifested by a different kind of ray. There are X-rays in it twice as strong as the ordinary X-ray; there is another ray which can be collected in a lead vessel and shown to be a form of matter, not a form of light; there are other rays which can be split off and turned out of their path by a strong magnet; while others rush through the strongest magnetism and show not the least swerve.

The X-ray was a mystery of man's making, and man is slowly mastering this strange new power that he has found. Radium is a mystery of Nature's making, and it may be hundreds or thousands of years before man

can master it. Perhaps he never will. But he lives in hope, and it is the hope of discovering the great secret of the invisible world that now inspires our men of science.

They see now that Plato, the wise man of ancient Greece, was right in saying that the world we see is a world of illusions. Plato declared that mankind lives in a dark cave into which there comes only a glimmer of light from the real world, so that the things in the real world are known to men only by dim shadows.

One of the first men to escape from the cave of illusion, and to get a glimpse of the realities of the invisible world, was Sir Joseph Thomson, the famous scientist of Cambridge University. He was experimenting in 1897 with a vacuum tube, trying to measure the particles of electrified air that formed a visible ray, and he hoped that they would prove to be atoms. It had been thought until then that the atom was the foundation-stone of the material world—the bricks God made the world with, the smallest things existing; but when Sir Joseph Thomson discovered a way of measuring them he found he had broken the thin air in the tube into atoms and had broken these atoms into something smaller still.

It is almost impossible to give an idea of the smallness of the things he discovered. Let us suppose that a drop of water is magnified to the size of the Earth. It would then be possible to distinguish the molecules of which it was composed. The molecule is made up of atoms. Now, suppose we could magnify the atom to the size of a large room, the particles Professor Thomson found would look like specks of dust spinning about the room. They are what we call Electrons, and are the ultimate things we know—the very heart of the structure of the universe. It appears that an electron is not an ordinary form of

matter, but a centre of electrical force. The material atom is only formed when certain electrons attract each other, in much the same way as a magnet attracts little bits of iron, and so forms a system of forces. In every atom is a big electron which attracts some small electrons, as the Sun attracts the planets and keeps them whirling round in perfect order.

Matter, indeed, it is now thought, is built up of electric energy. In a pebble is enough energy to supply London with electric light and to run all the trains in the tubes. Unfortunately this wonderful store of power in everything material around us is locked up beyond our reach. We cannot break the bonds that hold together the electrons in a pebble and persuade the energy to stream out for our use, as energy streams out of burning coal. Even in burning coal we do not touch the ultimate supply of power. The heat we set up in a furnace makes the electrons vibrate, and their vibrations produce electric waves, which we use as light and heat; but we never break up the atom of carbon in coal as Sir Joseph Thomson broke up the atoms of air in his vacuum tube.

It is the dream of science to break up the atom and use its power, and it is radium that is pointing the way to the solution of this great problem. Radium is matter in a radiant state. It burns with terrific force, yet it never goes out. The radium now used in our hospitals will continue to give out energy for more than a thousand years. If radium were so cheap and plentiful that we could use it instead of coal, our fires would never go out. An electric generating station would produce electricity for twenty centuries out of a single piece of radium. Our steamships could sail round and round the world without needing fresh fuel. We should need no coaling stations

for battleships. When ships were worn out their radium would be put into a new vessel, and the process could be carried on until a great fleet of ships had been built and used up. We could make most of our machinery automatic, and with a piece of radium as driving power the machines would go on working day and night. Mankind would be rich beyond the dreams of avarice. The Earth would be a playground, for none of us need work more than an hour a day. We should grow our crops with electricity, and so increase the supply of food that twice the number of people in the world could live on our planet.

But when radium has shown us the way to the power of the electron we may not need radium at all; for we shall use the power of the electron itself. Already we have found that the source of the wondrous energies of radium is in the electrons Sir Joseph Thomson has discovered. But the electrons of radium atoms are not stable. Some fly about and produce wild disorder, and then the atoms break down, and bits of them stream out and give off the wonderful radium rays. We could change any bit of matter—a stone, a brick, a piece of wood—into something that would give off energy for a thousand years if only we could free some of its electrons in the way the electrons of radium set themselves free.

Before we can do this, however, we have to solve the great radium mystery. We have to find the cause of its radiancy—the thing that loosens some of its electrons, sends them in a fierce bombardment against the other atoms, and unlocks the vast store of electrical energy hidden within it. When this secret has been found man may be able to set free the electrons in some common form of matter, and thus make it a radiant source of everlasting energy. If this should happen, power would

be as cheap and plentiful as the air we breathe. A quick and easy way of breaking up an atom into the electrical energy of which it is composed will change the fortunes of the human race. Man will then be, indeed, lord of the Earth.

And that day will come. Slowly but surely the truth is dawning upon mankind that the invisible forces of the world are the great reality, and that the things our eyes can see are but the shadows of the universe.

A thrilling thing it is to think of the new powers man is gathering about himself, the way in which the universe is opening its secret doors to him; and of all these things—the atom which has broken into pieces, the electron with a power in it that the human mind can hardly conceive, the ether which has in every cubic inch power to do the work of 25 million horses for 40 million years—of all these things we may say in truth that they are unlocking the gates of a new world. They will change the future of the world for our children's children, and no man can say what wonders will come as our knowledge of them grows. We can hardly imagine a silent race suddenly finding the power of sound, or a blind race suddenly finding the power of sight, but either of these would be in something like the same position as the race that has found the power of harnessing the ether.

Already the wonderful ether has saved its thousands of lives, has revolutionised the communications of the world, has lifted up the imaginations of men so that nothing that happens surprises us.

We stand at the gate of a new Earth, and no man can say what is coming.

In the fields, as in the towns, the work of the world goes on. From the train we see the harvest gathered in, the munitions of the human race that never fail.

THE HARVEST THAT WILL NOT FAIL

IF a few inches of soil that cover the surface of this globe should fail us suddenly, if its workers should strike or mutiny or fall asleep or pause for any cause, there is an end of you and me and of this book and all things.

But these things will not fail. The earth has been ground down from rock by the mills of God, and it does its perfect work. Poor, dead stuff it seems as the ploughman turns it over, digging in leaves and seeds and weeds, and bodies of insects, and bacteria and dust; but it is alive with power, it is packed with wonder, and we may say, by altering just one word of one of its great poets, that "all that tread the globe are but a handful to the tribes that labour in its bosom." The end of their labours for us is the greatest event we know—the harvest. No other natural or national event can compare with the harvest. If you would read a good tale of adventure, read the story of the hundred million tons of wheat that burst through the gates of the earth each year, bringing life for men and nations.

Pick up a thimbleful of soil and try to think of the power in it. The brain that has measured the Sun and weighed the Earth is beaten by this thimble. There may be thousands of millions of living creatures in it; if it is very good soil the thimble will hold within it thousands of millions of separate particles. And yet the earth is not so closely packed together that things have not room to move, for half the space in a spadeful of soil will probably be filled with air.

It would never do to have no room to move down in the earth, for the population underground is millions of times greater than above. The power down there is infinitely greater than any power that men can wield, and nothing that interests us above can matter very much if ever the workshops stop below. So there are passages and highways down in the earth, and lines of traffic and avenues of power, an unthinkable crowd and incredible forces working for ever, morning, noon, and night.

The power behind the harvest staggers all our engineers. The little pump on my hilltop in Kent brings up the hill five hundred gallons of water every day ; and a great fuss it makes. But the water runs up through a wheat-field in which the pumping of five hundred gallons of water is mere child's play. Somebody has worked it all out and found that six hundred and fifty tons of water are lifted up for every ton of corn that grows. The cells through which the water rises are kept almost constantly supplied, and are sometimes so full of water that the pressure on their walls is more than the cylinder of an engine could stand. Yet the walls do not break, and the cells will sometimes last for fifty years.

The water rises through them from the roots, up the stem, and into the leaves ; and through a myriad little openings in the leaf the water oozes out again. It has done its work and goes on its way. A poplar tree will give off a barrel of water in a day ; an acre of cabbages will give off a hundred thousand gallons in a month. Look at a big oak tree and think of the work it does. In a single summer it will pump up from the earth a hundred tons of water, and give it back to the air.

And a plant is not a pumping station only. It is a factory. It uses up materials and makes them into priceless things for men. Put a heap of lime in a clover field and watch it, and you would be surprised to see it disappear without any visible cause, but a single acre of clover will use up a hundred pounds of lime. An acre of wheat uses up much less; but try to grow wheat without lime. It has been tried once. The lime was taken from the menu, but the wheat was fed with everything else it needed, and the result was that it starved to the point of death. Then it was given a meal of lime, and in a few hours it picked up its strength and was putting out new buds. It is said that a hundred square yards of leaves working in the sun would make a pound of starch; and such things help us to understand the work that goes on without ceasing under our feet.

Fortunate it is for us that it never stops. It goes on while we sleep and when we wake. It is for us to turn these ever-moving forces to our ends. Leave them alone and they will spend themselves; leave our corn-fields untilled and a generation or two will cover them with forests. Nature knows no shirkers. Although we are young in our new learning of the earth, we know a thousand different sorts of microbes working there. There are insects always creeping about, boring their way down in the soil, carrying carbon dioxide in their train. There is the rain bringing down mineral salts, washing down germs and microbes and all sorts of chemical powers. There is the wonderful worm, the poor despised first ploughman of the earth—though if we know the work he does we can never despise him, for he has been through all the ages a benefactor of mankind. He has tiny lime glands that act on the soil of the curious worm casts he

pushes up in the night ; and the rain washes down these casts into the soil again, with all the precious qualities the lime glands of the worm have given them. Long before man tilled the earth the worm was ploughing it, and he did it then, as he does it now, at his peril, for there is always the blackbird, and the starling, and the crow looking out for him above ; and there may be a mole below.

The end of all these labours is the harvest that sustains us all. We plant a seed in the earth and it grows into something infinitely greater than itself. It has taken to itself a power from the soil about it ; the rain has brought down to it power from the skies ; it throws out stems and leaves to win for it more power still from the air. Nor is it working blindly, to no purpose : we have no right to say that anything is purposeless. Leave a root uncovered and it will burrow in the ground, and, once down there, will feel its way towards water, or towards the soil it needs. If there is a drain near by it is well to watch lest the roots should choke it. It will turn towards what is helpful and away from what is harmful ; it follows the advice of Paul and holds fast to that which is good. Darwin spoke of the tip of a root as something like the brain, and there is no wonder. If the tip comes up against a stone, the growing part of the root will turn aside to set it free. Sow things at the wrong depth, and they will send out shoots to the proper depth before they develop roots. The seed will find its level, the root will change its course to find its soil, the leaves will turn to the sun. It is not all poor haphazard down below. There are miracles no man understands ; there is law that does not fail ; there is order we can count on all the time.

So our harvests come ; so they have come since the first man put a seed in the earth and found that it would

grow ; and so they will continue. There are lessons for us in the harvest field. We organised our industries for war, we built up munition works in which we could walk for miles through corridors of iron and steel. We have yet to guard properly our harvests, to organise these great munition fields of the human race. The soil will go on growing things, but it is not enough that we should take the richness out of the earth and give it nothing back. The science of the proper uses of the earth is only just beginning, but we know enough to know that what we take out of the soil we can give it back again. Two scientific miracles are going on now—the reinforcement of the virtue of the soil and the making of new foods. Men can make a soil to suit a corn or a corn to suit a soil. Science has done wonders with a grain of wheat, and it will do more. In Tennessee not long ago it saved the wheatfields from disaster. The crops had fallen to eight bushels an acre, but a chemist in the university went out into the fields and today thirty-seven bushels an acre grow on the same land. That is a gain of about thirty bushels an acre, and a gain of one-tenth of that would enrich the world's wheat crop by a hundred million pounds a year.

It is knowledge and education that our people want. Hand in hand with Nature, learning to master her by obeying her, we shall win new powers and conquer new territories. It is one of the great tasks of the Great Peace. We have learned something of munitions in our time ; we have risen mightily to the call of war and poured out strength beyond our dreams. Peace, too, has need of munitions, and on these we build up, not tragedy and bitterness and vain regret, but happiness and millenniums.

*Everywhere the energies and thoughts of
men are fashioning the world for us in this
busy noontide of the day.*

THE WORLD ON AN EDITOR'S DESK

WHAT is it the newspaper tells us of the way the world goes round ? What is it that is happening hour by hour ? Let us sit at the Editor's desk and see the history of the world as it arrives.

By telegraph and telephone, by post and train, by ship and aeroplane, by messengers on foot and messages by wireless, the news pours in.

It deals with everything. It covers the past and the present and the future. It may take us back a thousand years to Alfred, or two thousand years to Caesar, or three thousand years to Tutankhamen. It may take us to the Stone Age or the Ice Age ; or back to the Nebula. It may bring us news of Romans, or Greeks, or Cretans, or Cave Men.

It may tell us what is happening in the clouds, or in the sea, or in the solid earth. It may interest us in Neptune or the Milky Way ; in the atom or Mount Everest ; in a lion, an eagle, or a duckbill platypus.

On an editor's desk meets all the world : every country, every class ; rich men and poor men, wise men and simple folk groping in mental darkness. His post reflects the thinking and the rambling mind of the silent multitude, the hopes and disappointments of glad and sad humanity. He lives, in his working day, in all places and in all ages.

He may have to consider, in the same hour, such questions as whether man lived before the mastodon died ; how long it was ago that the land bridge broke

down between England and the Continent; whether a wireless wave goes straight out into space or hits against something and turns at right angles; if the idea for photographing Mars from the bottom of a pit shaft in Chile is possible or mad; if there is any explanation in science for the amazing power a tiny bloodworm has of picking up oxygen in stagnant pools; if an oak leaf actually has half a million air-sacs; whether Dolphin Jack is still piloting ships to New Zealand or whether he died during the war; whether Rheims Cathedral was or was not used as a watchtower in the war; what is the best food for a tortoise; what is likely to happen in Russia; why Mr. Wilson failed; whether the Rope Trick in India has ever actually been seen. . . .

Truly a wonderful day is every day that comes, and a wonderful life is his who watches it go. The newspaper is human, and it finds its interest often in things that matter not so much as a sparrow falling to the ground, but to those who know how to read it a paper is thrilling enough. We will look down at the sort of news that comes into the day of a paper which boasts that it watches the world go round and sets down the things worth while. All the events that follow here are from the story of our days as told from week to week in the Children's Newspaper.

THE SEVENTH MAN

This touch of sublimity, worthy to live in history with the story of Sir Philip Sydney's cup of water, was given to the world in the Children's Newspaper. It is true.

THE Prince of Wales was asked one day if he would visit a little private hospital where thirty-six men, so terribly injured in the war that they could never hope for release, were fighting the desperate battle of patience and courage. The Prince named a day, and went.

In the ordinary way he went round the beds, and was then conducted to the door by the grateful staff. But he stopped suddenly, and said, "I was told you had thirty-six patients. I have seen only twenty-nine."

It was explained to him that the other seven were so tragically disfigured that the visit was omitted.

"For my sake or theirs?" he asked.

"For yours, sir," was the answer.

At once he insisted on seeing these seven men. He was ushered into the ward where they lay, and at each bed he stopped for some minutes, saying cheering words. Then, once again, he paused at the door.

"But there are only six men here," he persisted. "Where is the seventh?"

He was told that nobody could see this seventh man. Blind, deaf, maimed, and disfigured out of the likeness of humanity, this seventh man lay in bed in a room to himself, from which he would never stir.

"I must see him," said the Prince.

"Better not, sir. You can do him no good. And the sight is terrible."

"Still, I wish to see him."

One member of the staff accompanied the Prince into that little darkened room of unutterable tragedy. He relates that the Prince walked firmly to the bedside, that he turned very white, but stood there with bowed head, looking at the man who could neither see him nor hear him, looking at that awful wreck of manhood as though he would see the final anguish of war. Then the Prince stooped down and kissed the man's face.

When he rose it was as if another Presence had come into that room.

A BOY'S NEW WORLD

WHILE on a short cruise among the islands of the Outer Hebrides, a business man from Manchester had a curious and perhaps unique experience.

As his ship was still a considerable distance from the islands, a small boat hove in sight, bringing a man, his

wife, and a boy nearly five years old. This was the most remarkable child the man from Manchester had seen.

The boy had been born, after the war began, in a lighthouse on a lonely rock. Neither father, mother, nor child had left the lighthouse while the war lasted.

The whole world was new to this little lad. Until he saw the faces of the passengers peering down at the tiny cockleshell of a boat in which he sat, he had never known that there were other people in the world at all.

He had never seen another child, and his astonishment was ludicrous at the appearance of two children on board, one younger, one a little older than himself. The sea, the sky, and the rocks he was familiar with, and he had seen ships from a distance; but the great crowd of human beings he did not understand. He had evidently regarded the world as being owned and peopled entirely by himself and his parents.

He had never seen or eaten sweets, and when given some chocolates he rolled them on the deck. On being told to taste them, however, he ate them gladly, and when given a handful of pennies he also tried to eat them. Finding this impossible, he threw them overboard!

KATE LEE

A QUIET little figure has gone out into the universe from the East End of London.

Her name was Kate Lee, and she was beautiful with a love which burned in her eyes. Rarely has one seen a face so visibly illumined from within. She was shining with the most vital happiness. Her low and gentle voice had the ring of a bliss that really sang with the love of life. But it was all subdued and unexcited; it was born of a spiritual calm that nothing could disturb.

What made this little woman so different from the rest of the world? There are some secrets of personality that baffle us, but this is not one of them.

Kate Lee was wonderful because with all her heart she loved the worst people in the world. She did not go to the worst people because it was her duty or because

she thought she ought to do something to help them. She went to them because she loved them, and knew she could change their misery to a happiness as great as her own.

The good never satisfied her. In an atmosphere of respectability she was stifled; among hypocrites she was paralysed; but down in the depths of misery, where men and women were realities, however terrible, there she could go rejoicing, this frail little woman with the glowing face and the low voice, because she carried in her hands the magic of Christ.

One summer evening, nearly twelve years ago, a man was sitting with three men who had committed almost every horrible crime.

They had been talking of their lives. Each story had been atrocious in a different way, but all had ended in the same manner. A woman's love had pursued them to the depths of the pit of despair, and had saved them.

"Ah," said one of these men, "if anybody goes to heaven it'll be that little angel of God!"

Her love not only saved individuals, not only reached and rescued those of whom the churches despaired and those whom science would have destroyed as monsters; it went like a song from heaven through one of the very worst quarters of London, penetrating homes where her face was never seen and purifying lives she never met.

This is why, when they carried her to a grave, huge crowds followed the coffin. The Salvation Army did well to fly flags and play triumphant music, for if ever any spirit entered heaven it was the spirit of this angel of God.

THE EYES IN THE NIGHT

AN extraordinary story has been told of a woman who, returning home at night, saw the eyes of two intruding men shining in her dark house. As one of the men, if not both, had his face blackened, perhaps the strange experience is explained.

But there is a grimmer story than this to be told. Miss Marsden was a noble woman who devoted her life to ministering to the lepers in Siberia. Her self-imposed duties took her far from her own home, and at all hours.

One night, as she was returning from a long journey, she saw lights gleaming ; the lighted windows of wayside houses, she thought. Being weary, she suggested to the driver that they should halt for the night at one of the houses. "Madam," said he, "those are not distant houses ; they are the eyes of wolves !"

KOLTCHAK WALKS OUT TO DIE

A MAN has returned from Russia who fought with Koltchak. What a page of history is that out of the darkness of Russia's endless night !

Less than a year ago Admiral Koltchak was supreme ruler of Siberia, an area of nearly five million square miles ; he commanded a victorious army, and as he moved from point to point of the battle front he carried with him over sixty million pounds in gold. Today he lies in a nameless grave, shot like a felon.

It is a lamentable end to a brave and marvellous career. As a lieutenant Koltchak was an explorer, and accompanied Baron Toll, his leader, on a memorable expedition into the Arctic, when they found, far in the frozen Siberian sea, remains of mammoths and of the luxuriant trees on which the mammoths fed.

And when the fearless Baron Toll, on a later expedition, went to his death, it was Koltchak who, in a tiny pinnace, went fifteen hundred miles in the Arctic night to learn his fate.

With the coming of the Great War, Koltchak was the vitalising influence of the Russian navy. But the revolution brought mutiny there, and his sailors demanded his surrender and his sword. It was his gold sword, given to him for valour, and rather than yield it up he flung it, as King Arthur did, into the deep.

He escaped to America and reached Siberia, where, supported by the Allies, he raised a great army to try to bring back peace to Russia. He swept westward by victory on victory. Then, unhappily, intending the best, he did the worst, as so often the Allies and their friends did in Russia then. He dissolved all the local governing bodies and concentrated power in his own



THE HARVEST FIELDS THAT SHALL NOT FAIL



THE LONELY HEIGHT ON THE MATOPPO HILLS WHERE THEY LAID TWO FRIENDS
SIDE BY SIDE



CECIL RHODES ON THE HILLTOP WHERE HE NOW LIES

hands, and Siberia could not be managed by a dictator. Dissension and treachery ruined his cause. His army became disorganised. The Bolsheviki crushed him, and his forces were dissolved. On the fall of his stronghold, he was handed over to a revolutionary committee and was led out and shot.

He did not please everybody, and he had great enemies. There were even those who declared that his purpose was to destroy the Revolution and restore the Tsardom. But no friend of Russia and no friend of humanity would like to see that done, and Koltchak himself declared that all he fought for and prayed for was to save the land he loved and bring it back to civilisation. He denied that he would bring Tsardom back.

In any case, here was a man. Russia is an appalling problem, but is not the tragedy of Koltchak, right or wrong though he may have been, enough to touch a heart of stone?

TWO FRIENDS ON A HILLTOP

OUT of the mighty rock of the Matoppo Hills, in Rhodesia, men have hewn a tomb for the remains of Sir Starr Jameson, the Dr. Jim of South African history. He goes to lie beside Cecil Rhodes, his friend and chief.

Rhodes died many years before him, and was buried among the great boulders of the hills that overlook Bulawayo in that land to which he has given his name. Jameson passed away during the war.

Rhodes and Jameson both went to South Africa to save their lives, threatened in our damp climate by tuberculosis; and the two invalids became the strong men of the continent. Rhodes made a huge fortune from gold and diamonds, and, with a passion for extending the British Empire, embarked on vast schemes of Imperial importance for the acquisition of territory. He dreamed of the railway from the Cape to Cairo, and began to realise his dream. He dreamed of a united South Africa, and started it. He believed in peace.

But how many things went wrong on the way that Cecil Rhodes was treading! Jameson practised as a

doctor, was brought in touch with the Colossus, became his friend and his closest associate; and one outcome of their collaboration was the miserable Jameson Raid into the Transvaal Republic of the Boers. The raid failed and discredited both men, and Jameson was sent to prison. Returning to Africa, he was re-established in public favour, but not till after the Boer War, which was indirectly the outcome of the raid.

But Rhodes and Jameson were sinners the world forgave. They thought they could do in the nineteenth century what men of their type did in Elizabeth's days, and the world could not tolerate that. But, in spite of all, it was felt that they meant well.

They admitted their wrong. Jameson used to say, "Yes, but I hope I have atoned." Rhodes prepared a magnificent expiation. He left a will which was perhaps the most striking document of the sort since Caesar's. Among many public benefactions he established scholarships at Oxford for sons of the Empire, and for Americans and Germans, in order that the world might be brought together and peace made easier.

When he heard himself reviled for his record he used to say, "Never mind. I know what I have got here" (pointing to the pocket which contained his will). "I know I shall be understood when I am gone."

He judged rightly, for we have all forgiven him. We have pardoned Dr. Jim as well, and there were many tear-moistened eyes when these two men were brought together again, in the rocky tomb on the Matoppo Hills.

THE LITTLE STONE HOUSE

A MARVELLOUS story of a shipwrecked crew and a desolate island comes from the Indian Ocean.

A British ship on its way from New York to Melbourne caught fire at sea. For four days the crew fought the flames, but in the end they were overpowered, and had to take to their boats.

For two days and nights the men were exposed to terrible cold and very rough seas. Three men died from cold and hunger. At last the survivors reached the

island of St. Paul, a little islet cast up, once upon a time, by a volcano under the sea. It lies in the Indian Ocean, midway between Africa and Australia. It is bare, uninhabited, stony, and the fate of the sailors seemed little better here than in their boats.

But on this lonely island these unhappy men made a discovery that will hardly be believed in a book. When the sailors were almost dead from hunger they discovered a little stone house, and in this house these starving men found a store of—food! The house had been there for eighteen years, and had been stocked with tinned meats and other preserved provisions, and with woollen clothing, blankets, and matches—the very things a shipwrecked crew most needed!

The explanation is that the island belongs to France, and for some unknown reason a French warship, calling here eighteen years ago, had built the house, and placed in it the stores which were to save the lives of the shipwrecked Englishmen. Who can picture the amazement and delight of these unhappy men? They ate their food sparingly, lest their stock should run out, and they kept bonfires alight on the shore to attract the attention of passing ships. Each night one of the men sat up to watch, and after nineteen days they were sighted by a British ship, which called and rescued them.

And now every sailor will wish that all desolate islands in distant oceans could be provided with little stone houses, and cupboards full of food.

AN OLD FRIEND GOES FOR A WALK

AN old friend of the Duke of Beaufort has been out for a walk, and the fact is worth recording because the Duke's friend is about two hundred years old and has never been known to take so long a walk before. He wandered out of Wentwood Forest and was missing for a month. Then he was found nine miles away.

It would not have been a long journey for a boy, or a quick journey for a hare, but for the Duke's friend, who has slept under a rock in the forest every winter for thirty years, and was alive long before the French Revolu-

tion was thought of, it was a wonderful walk indeed. For the Duke's friend is a tortoise.

TRUTH FROM THE BOTTOM OF THE SEA

THE sea has given up one of her secrets, recalling to mind the horrors of war. It shows how Spain and America were thrown into war by a frightful blunder. Truth is said to lie hidden at the bottom of a well, but in this case of the war between Spain and America it had lain for years at the bottom of the sea.

It has been revealed to the world at last by the recovery of the battleship *Maine*, which has been raised from the sea in Havana Harbour.

Spain and America quarrelled over the Spanish possessions in the West Indies. The quarrel ought to have been settled without war, but in February 1898 the American war vessel *Maine* was blown up in Havana Harbour.

It was believed in America that the explosion was caused by a submarine mine placed by the Spaniards under the hull of the vessel, and the greatest excitement prevailed in the United States. But America could not at once make war on Spain as she wished. All her naval ammunition had been stored on the *Maine*, and had gone with that vessel to the bottom of the sea.

In order that she might be in a position to fight, America had therefore secretly to renew her stock of ammunition, and while this was being done the American Ambassador to Spain had to conduct negotiations.

For six months this game of make-believe was carried on. Then the ammunition was ready. It was placed in a special train for San Francisco, taken on a ship there, and hurried out to Hong Kong, where it was distributed to the American Fleet.

Then war was declared by America. The war cost Spain the last of her great possessions in the western world which Columbus and his successors had given her.

So the Spanish Empire which Columbus founded was scattered by people of the country which Columbus found.

And now it has been discovered that the war was based on a terrible mistake. The raising of the *Maine* has enabled American naval experts to show that the explosion which sank a ship, and caused a war, and lost an empire to Spain, was not caused by a Spaniard! It occurred *inside* the ship, and was caused by the spontaneous explosion of the *Maine's* own ammunition. Explosives in the ship generated heat and burst; and the *Maine* went down in Havana Harbour through nobody's fault. But Spain lost her empire—and perhaps the consolation is that she deserved to lose it.

THE MAN WHO TRIED TO ESCAPE FROM POMPEII

POMPEII, which the mud and ashes of Vesuvius buried nearly nineteen centuries ago, has revealed another tragic story to the men who are digging out its history.

The body has been found of a poor man who, when the terrible storm of fire and ashes swept down on the doomed city, climbed a tree in the hope of saving himself. He hoped, no doubt, to rise above the burning deluge of fiery matter which was burying the streets, and to reach purer and cooler air. He sprang into the tree, and clung with hands and knees to a branch. Whether he died up the tree we do not know, but at last the bough broke beneath his weight, and the poor man fell, still grasping the branch in his hands.

Perhaps he was already dead, perhaps death seized him as he fell. What we know is that ashes and lava enclosed him, and there for nearly nineteen hundred years he lay, ever grasping the branch of the tree upon which he had depended in vain for life. His body, with the broken branch still gripped by his knees, has now been found, and no more impressive picture has come from that city of terror and death.

THE ONLY THING THEY HAD

DURING the bitterly cold weather in early February a very old man and a very old woman were tramping toward the Welsh mountains, pushing a sugar-box truck on wobbly wheels. A traveller spoke to them.

Noticing a hole in the bottom of the box, like the entry to a dog kennel, he asked what it was for, and was told it was for the cat. "Surely," he said, "you don't take a cat about with you?"

"Yes," said the old lady. "When we broke up our home we could not leave the cat, after all these years."

Then they showed the traveller a fine cat. Trundled over the wild roads of Wales, it was the only thing they had.

CANDLE-LIGHT

THERE is in some things only a step between the conditions of the ancient and modern world. The other night an electric wire went wrong in Paris, and the French Parliament sat making laws by candle-light.

Members must have thought of the old days when all laws were made by candle-light, or by the flare of dismal lamps charged with fish-oil or melted fats. Gas-light was one of the things Napoleon never saw. He had been four years a prisoner on St. Helena when the first gas-lamp was lighted in Paris. All the Duke of Wellington's despatches were written in candle-light, and the greatest speeches ever heard in Parliament, those of Burke and Fox and Pitt, were all delivered in a House fitfully illumined by the flickering light of tallow candles.

THE FAMILY GHOST

WHO does not love a ghost story, whether we find it in Hamlet or elsewhere? No ancient feudal castle is complete or respectably romantic without its ghost. The castle need not have much air or sunlight, it need not have very good drains or water supply; but it must have its haunted chamber, with mysterious tappings and openings of doors, flutterings in the walls, and an eerie horror of suggestion that spirits walk abroad when midnight sounds. It always has been so since castles first grew ancient and distinguished. Now we can add a new chapter to the long history of ghosts and their ways.

A ghost story is so interesting that we really like to pretend to believe their nonsense; but there are men of an inquiring turn of mind who are not sure that there

may not, after all, be something in the stories. Many of these men are members of a learned body which exists to investigate matters of this sort.

They have done one of the most brilliant things ever thought of. They have turned the instruments of science against the legends of the ghosts, and have obtained results which must be a bitter disappointment to many of them. For some of the finest of all our fine ghosts prove to be—you would never guess—simply the effects of earthquakes on the other side of the world !

The man who proved it all was Professor John Milne, the founder of our real knowledge of earthquakes. He set up exceedingly sensitive instruments, which detected the earth-waves arising from earthquakes. He could tell the actual distance, and often the very place, where the earthquake occurred.

Now, Professor Milne was turned loose in some of the best haunted castles. He set up his earthquake recorders in the cellars, and when the ghosts were supposed to walk he found that the movements, noises, and opening of doors were due to tremblings in the earth ! Earthquakes are always happening somewhere, and the vibrations travel through the earth like sound along a good conductor.

An earthquake on the Continent rocks the waters of the English lakes and sets the lochs and tarns of Scotland dancing as if they were suddenly possessed of tides ; and the influence producing these effects makes windows rattle and doors open, while the draught rushing in from the opened doors sets curtains and bed-hangings waving to and fro.

What an irony it is to think that, as some mighty convulsion sends its vibrations rolling across the world, the superstitious man in his castle, hearing the strange effects, says, with lofty pride, "Our family ghost is walking" ! Truly such a man, detecting his family ghost about its silly business, is like the fly riding on the hub of the wheel saying, with immense satisfaction, "See how I make the wheel go round."

TO A LITTLE MAN FROM PARADISE

Oh, our little man has come, and I am mad on him (says a letter from a happy home in France). He is too sweet for a word. The dear thing seems not to regret at all leaving Paradise—he looks so happy and homy; and I believe he will be a jolly boy, for I saw him nearly smile.

AND so you have arrived, little man! Once more God has sent our Earth a messenger from Paradise.

Little man, who made thee?
 Dost thou know who made thee?
 Gave thee life and bade thee feed
 By the stream and o'er the mead;
 Gave thee clothing of delight,
 Softest clothing, woolly, bright;
 Gave thee such a tender voice,
 Making all the vales rejoice?
 Little man, who made thee?
 Little man, God bless thee!

I think you know who made thee, for did you not arrive without regret in this old world—and even almost smiling? Did you not come to us trusting in the Universe? Did you not mean us to remember, as you smiled at the gate of the world, that our old Earth has got another chance?

You will not be troubling over-much, dear little man, about the bothering world men have made of this glad Earth; for these grown-ups there is misery on misery, working and worrying for years upon years, taxation beyond their power to bear, through the mess men have made of things while you have been in Paradise. But you come smiling up as this old world rolls on her way.

Ah! it is Youth that smiles today, Youth with the Future before it, Youth crying out that faith is not yet dead, but that He who made the Earth and fashioned it to be a garden of delight is giving it another chance when children come.

You bring new strength, new hope, new vision;

you bring into this dark world again the happiness it has lost. You have the natural joy of being alive—as a lark has it, singing high at heaven's gate ; as a squirrel has it, running up the trees ; as the lamb has it, basking in the sunshine ; as the great tulips in my garden have it (so the poets say), raising their red heads on their long, green stalks. "Suffer little children to come unto Me, for of such is the Kingdom of Heaven," we read, and from the Kingdom of Heaven you come, trusting the powers that brought you here, with confidence that He who fashions worlds and brings Life into them will lead you safely through.

He will. Oh, the glory that awaits you, little man ! Oh, the joy of Earth, the leaping life, the stillness of the everlasting hills, the music of the running brook, the Sun by day and the stars by night, the gladness of a tree as its leaves ripple in the wind ! Life has not anything to show more fair than these, but it is glory enough for all.

Dear smiling little man, my love to you, to you and France and Little Treasure Island, too ; and God be with us all.

PETER PAN

SHOULD THE WAR HAVE GONE ON ?

ONE of the opinions most commonly expressed about the war is that if it had been carried on a few days longer the end would have been more satisfactory. Is that true ?

The one man who had a right to decide about carrying on the war so as to beat the Germans more thoroughly was Marshal Foch, and his opinion was : " If the Germans sign an armistice on the conditions laid down no one has a right to let another drop of blood be shed."

When asked how long it would take to drive the Germans across the Rhine, he said : " Perhaps three months, perhaps four or five months. Who knows ? "

Those were the opinions of the man who, from a military point of view, had won the war. Yet there are people in every street, in every train, wherever two or three are met together, who deplore that the war

was not continued longer, because they know it would have brought the Germans to collapse in four more days.

Marshal Foch knew the losses he had sustained, he knew the strain put on his men, he knew the resistance the enemy was still capable of offering—the fiercer resistance as the war rolled backward on to German soil, and the call was for the defence of the Fatherland and not for invasion of other lands—and, knowing these things, he welcomed an armistice that opened a path to peace.

It is just as well that those who constantly bewail the too-early end of the war should know against whose opinion they are setting their own. They are claiming to know better than Foch.

WHAT WAR DID WITH A BOY

A YOUNG man named McCarty has died in Pennsylvania after a four-years struggle with terrible injuries inflicted on him by a stream of machine-gun bullets.

He was twenty-four, hardly more than a boy, when he was carried off the battlefield, his body riddled by shots fired from the air. At first it was thought impossible that he could recover. He went through twenty operations of a serious kind, and as many more of the kind known as minor. Eighteen bullets were extracted from his body; fourteen of his ribs had to be taken out. He lost his collar-bone, and then part of one shoulder-blade, and still he lived and seemed to get better. He was even able to leave hospital for short visits to his home. Now, after his long, brave fight, the end has come.

That is what war means. A sudden, cowardly attack under utterly unequal conditions, practically a murder. Then a dragging life-in-death with pains and miseries that cannot be described. Poor McCarty! Poor millions of other lads in all the armies! *And unless we are careful the politicians will let it happen again.*

THE GOOD OLD MAN

How much are we to believe of all that we hear?

A good-natured man saw two workmen in Brixton wearing old boots. He was sorry for them, so bought

them each a new pair. The story got about and grew like Jonah's gourd. It was reported that the good-natured man had given away dozens of pairs of boots; that he had been distributing money—shillings, sovereigns, even Five Pound Notes. The story continued to grow until it was told that the man was giving his little fortune of a thousand pounds away.

People crowded to his house to share in the fabled fortune, but the old man could only gasp out to them his great astonishment, and a kindly Good-afternoon.

THE TRUTH ABOUT THE LIGHT BRIGADE

Theirs not to make reply,
Theirs not to reason why,
Theirs but to do, and die.

Two generations have passed since 670 British soldiers charged the whole Russian army at Balaclava. "It is magnificent, but it is not war," said a French general, watching the charge of the Light Brigade.

Someone had blundered, but it seems as if the blame had been put on the wrong man. For Lord Cardigan, who led "the noble six hundred," left a signed statement which has now come to light. It alters all our knowledge of one of the most heroic blunders in history.

It has hitherto been regarded as certain that Captain Nolan, the aide-de-camp to Lord Lucan, was responsible for the terrible mistake. But Lord Cardigan's statement makes it clear that Lord Lucan was to blame. The statement says:

Lord Lucan came in front of my brigade, and said: "Lord Cardigan, you will attack the Russians in the battery." I said: "Certainly, my lord; but allow me to point out to you that there is a battery in front, a battery on each flank, and that the ground is covered with Russian riflemen." Lord Lucan answered: "I cannot help that. It is Lord Raglan's positive order that the Light Brigade is to attack."

Lord Cardigan's statement tells how he led his men to death, and how Lord Raglan afterwards said to him: "What do you mean, sir, by attacking a battery in

front, contrary to all the usages of warfare and the custom of the service?" Upon which Lord Cardigan said: "My lord, I hope you will not blame me, for I received my orders to attack from my superior in front of the troops."

The fact was that the leader of the Light Brigade should have been ordered to attack only the right flank of the Russians. Captain Nolan realised the terrible mistake, and tried to turn the charging horsemen in the right direction. But he was killed. His stiffened muscles kept him on his horse, and he rode, a dead man, with his arm uplifted, through the ranks of the Light Brigade.

THE DOG THAT HELPED MANKIND

LINLITHGOW has put a bronze tablet on the house where Dr. Waldie lived. Who was Dr. Waldie?

One of the most helpful discoveries ever made by men of science was that chloroform will send anyone into such a deep sleep that the surgeon can operate on the body without pain. By this discovery men and women have ever since been saved from terrible pain that must have caused death.

The doctor with whose name the discovery of this power of chloroform is always associated was Sir James Young Simpson, of Edinburgh, who first used and popularised the drug; but it is now said that the suggestion to use chloroform was made to Dr. Simpson by Dr. Waldie, of Linlithgow, who was accidentally assisted by an inquisitive dog, a pet spaniel, belonging to his neighbour.

The neighbours were great friends when Dr. Waldie was experimenting with chloroform and giving his results to Professor Simpson. One night, when the neighbour was leaving the doctor's house, he said:

"I think my dog came with me."

"Yes," said the doctor, "and there he is"—pointing to the dog lying stiff, apparently dead, under the table.

"He is dead!" exclaimed the neighbour.

"No," said the doctor, examining him; "his heart beats quite strong. He has been smelling that saucer I put there for a mouse. He is quite insensible. If you cut him to pieces he would not feel it. He will

come to himself in about an hour, and he will be all right tomorrow. I will look in and see him."

And so it proved. It was the accidental experiment of the dog Fido which led the way by showing them the power and safety of chloroform.

THE POOR NOBLES OF JAPAN

NEWS comes that the old nobility of Japan are petitioning their Emperor to increase their pensions.

Owing to the increased cost of living they are now very poor, and their pathetic appeal should remind all the world of perhaps the most splendid act of patriotism to which mankind has ever risen.

Before the year 1868 the Japanese nobility were the ruling power, living on lands and riches granted to them by former emperors, and controlling the soldier class, who were masters of the rest of the people.

The Emperor was kept in seclusion as half divine, and was never seen by the people. He was revered by all, but had no power. The management of the country was under a minister called the Shogun.

Then Americans and Europeans gained a footing in the land, and took with them Western ways. The Japanese had always been the cleverest people of the East, and their wisest men quickly saw that the methods of their forefathers would not long resist the Western ways. So they began to think out a way by which they could use whatever was good in Europe and America.

Their first step was to bring their Emperor out of his seclusion, and make him the real head of the nation. He was the one hundred and twenty-third ruler of the oldest kingly house in the world.

And then came a splendid act of patriotism that should make us admire for ever the old noble families of Japan. There was some fighting to retain their ancient privileges, but only a little. Nearly the whole of these fine men, moved by deep and glowing patriotism, gave up their positions and surrendered their lands and wealth for the general good, becoming plain citizens.

As they had no means of livelihood, the Emperor

arranged that a pension fund should be formed for them, so that they should not sink into poverty, and it is this pension which after the war proved too small to provide them with the simple necessities of life.

A MEMORY LEFT IN THE WORLD

Lady Agnes Noel has died at Oakham. It was an old friend who wrote these beautiful words of her, bringing a glow of something not of this world into the Times that day.

THOSE who were fortunate enough to be the friends of Lady Agnes Noel are realising how poor and mean the world looks that is no longer lit by that radiant presence. Her genius lay in the realm of friendship, and in that realm she never spared herself, and she gave far more than she ever took. An innate reserve—a sort of spiritual aloofness—made her personality always an elusive one; but of her own intention she kept nothing back, and she lavished herself upon her friends with a careless generosity which sought no selfish end.

And she had much to give. No untoward circumstance but was transformed by her keen and infectious humour; no trouble, however mean, that was not lightened by her sympathy. In the houses where she stayed every servant loved her, and if any there were counted dull, odd, or “bores,” Lady Agnes Noel would be sure to seek them out, and shed over them all alike the grace of her incomparable charm. She gave them a confidence in themselves and a happiness in her presence which at once put them at their ease.

Hers was the perfect humility which would exult over the qualities and successes of her friends with pride and delight, because she had never felt the breath of envy nor known the lurking grudge; hers the utter unworldliness which loved goodness for its own sake wherever she saw it, under whatever guise of mediocrity, and rushed to meet it as the moth to the lamp; hers the purity of heart which was ever learning and loving, forgiving and being sorry, trusting and admiring.

So to her was given “to see God” with unclouded vision and undaunted heart; and in the Church she loved

she sought and found rest. To us who are left it will surely be granted to find in our dull road her shining track.

THE TALE OF A FEW WISE FARMERS

THIS is a story of the days not long before the war, and it shows how hard is the way of knowledge.

Not many years ago one of our most beautiful and prosperous British colonies was almost ruined by a small insect no larger than a threepenny-bit. It is all told in the story of Natal during the seven years from 1905 to 1912. During those few years this insect destroyed cattle in herds of tens of thousands, and its mischief was stopped only by giving all the cattle a weekly bath. But the most wonderful thing about the story is that in the end even those who suffered most came to realise that the tragedy had been a blessing in disguise.

The name of the insect is easy to remember ; it is called a tick. There are many kinds of ticks in South Africa ; it was a dark brown tick that caused all this mischief. Up to this time most of the farmers in South Africa had been careless regarding their cattle. They kept larger herds than they could look after ; they could not grow food for them in winter ; they could not keep them clean ; and they cared more for quantity than for quality. There were at least a dozen different infectious diseases that came round every year and carried off large numbers, but it did not much matter because they were so plentiful and cheap, and it was thought that nobody could prevent these diseases. Of the calves born every year, four or five in ten would die before they grew up, and only a few of the wisest farmers suspected.

Wherever you went, except in the very cold parts, you would see cows and oxen covered with ticks, sucking their life's blood. No one knows what the poor beasts suffered, but everyone knew how very bedraggled and miserable they looked. There were just two or three thoughtful farmers who said that the ticks did a great deal of harm, and ought to be destroyed, and they found a poison which would kill the ticks. They built long troughs, which they filled with this liquid, and through which they made their cattle swim every few days. The

poison did not hurt the beasts, but it killed the ticks, and the result was that the cattle of these few farmers looked sleek and well, and were not often ill. But most other farmers thought these men were fussy.

Then, about the time the terrible fever broke out in Natal, the scientists employed by the Government to find out the cause and cure of the plague reported the result of their inquiry. They told the country that the plague was all due to the little brown tick. The two or three wise farmers had said all along that the ticks had a lot to do with it, but they had been laughed at. Now, however, everybody had to believe it, and the disease became generally known as tick fever. Still, no cure was found. Many different things were tried, but all failed. The wise farmers said, "Dip your cattle in the poison," and a few other farmers began to follow their example; but the Government said, "Dip your cattle by all means, if you want to dip them, but that won't stop tick fever." So the Government and the farmers tried other methods.

Thousands of cattle were killed to try to prevent the infection from spreading, but the plague grew worse. Some farmers lost nine in every ten of their stock, and so terrible was the plague that cattle taken ill in the morning were often dead at sunset.

Parliament passed all sorts of laws about tick fever. They compelled every farmer to fence his lands with barbed wire; they forbade anyone to move cattle along the main roads; they appointed hundreds of veterinary officers to go about the country taking the temperatures of animals. But still the plague spread, creeping farther and farther south. The whole country was faced with ruin, and the people in the neighbouring colonies became alarmed, guessing that it would be their turn next.

All this time the small but slowly-increasing number of farmers who were dipping their cattle kept on saying, "Prevention is better than cure; destroy the ticks, as we are doing." But they spoke as in a wilderness, and hardly anybody listened. One of the very first men to dip his cattle, Joseph Baynes of Nels Rust, tried hard to persuade the Government to force every

cattle-owner in the country to build a dipping-tank and put his cattle through it once a week ; but the reply he generally received was : " Wait till tick fever reaches Nels Rust, and your cattle will die like other people's."

Well, tick fever did reach Nels Rust, and the cattle began to die on the farms all round ; but Joseph Baynes's cattle *did not die*. They walked about as fat and sleek as ever, and Joseph Baynes was able to say to the Government and to the farmers everywhere, " I told you so." Slowly the truth was forced into the mind of everyone. The Government was at last driven to see that the few wise farmers were right, and that compulsory dipping of cattle was the only thing to save the country. A law was passed by which every cattle-owner had to dip his cattle once a week. The dreaded fever was checked. Within a year its advance had been stopped, except for slight outbreaks here and there. Everybody began to breathe freely again and business brightened up once more. By 1912 the farmers of Natal had learnt that the constant dipping of their cattle had not only put an end to the terrible East Coast Fever, but had actually put an end to nearly all the other diseases from which cattle had suffered for a hundred years.

The result of all this was that farming methods in Natal were entirely changed. Instead of keeping herds of half-starved mongrel cattle, the farmers were able to breed the best qualities, their herds of pure-bred stock being worth more than ten times as many of the old kind. The country had lost heavily through tick fever, but in the end the gain was far greater than the loss, and a new wave of prosperity spread over the land.

That is how the little tick brought a terrible punishment and taught a precious lesson to the British Empire.

THE HOUSE AMONG THE WOLVES

This is a mother's letter from a lonely place in the British Empire—a far-off ranch in British Columbia. How lightly we talk of the Empire : how brave a thing it is !

WE live among the mountains in a wide valley well cleared and cultivated, its sides sloping gently at first,

and then stretching out into level spaces. Above these the ground is steep and broken, and at last becomes inaccessible. Snow stays on the tops all the year round, but everything below that height is virgin forest. Settlers have partly cleared the benches, but among the pines on the upper slopes the wild animals have their home.

In winter, when the snow lays thick and food is scarce, the hungry wild things venture down into the clearings, and steal from their enemy, Man. All the year round they are on the watch, ready to take every chance.

There are abundant excitements. Once we had a week of fire, when the whole country was ablaze, and our only refuge was the lake. I dragged mattresses and an old tent to the creek, and put the children to bed there while I told them stories, and managed with a pail and a dipper full of water to extinguish the sparks in such a way as to keep the children unsuspecting of the danger. My husband and all the men in the valley were fighting to save the animals and homesteads. The noise and roar of flames and falling trees was unforgettable.

The animals are wonderful—the lynx that dared to take our cats from the verandah, the grey timber wolves that come in the hardest winter, the skunk that made the house unbearable for days because somebody fell over it one morning on the way to breakfast, the deer that came to the salt-lick in the bank, the lame coyote that we could never shoot, and the howling band of coyotes that kept us awake at night. The birds are wonderful, too—the humming-bird in my garden, the kingfisher in the creek.

The coyotes were a great nuisance. Lambs were not safe from them, and I have known even calves taken. These were safe enough, however, if running with the cows, for if there is any danger of attack from wild animals, the cows get the calves in a group, and form a ring round them, *heads outward*, and it goes ill with any creature that faces their horns. Bands of coyotes come out of the bush at night, especially when it is brilliant moonlight and cold and still, and they will howl round the house for hours. They used to wake the children in the night, and the little ones would creep closer under the

blankets, and with little, hushed voices would say, "Mother, is the bar up?"

We had an old horse called Jim whose working days were ended, but the autumn was fine and the pasture rich, so we thought Jim might have the benefit of both and live till the first cold came. We turned him into an enclosure of five acres across the creek which divided the ranch. It was a glorious place, our favourite spot, where clover grew thick under the trees and the cattle tramped down little paths through the bush, ending in mossy dells, where they lay through the heat of the day. The waggon road, leading to the big hay meadow beyond, lay between bushes of wild rose, hazel, cranberry, and wild cherry. Silver birch, poplar, and cotton woods bordered the creek, and the small harmless things of the forest lived in the denser parts. It was a little wonder-world for the children, and they played in it all the summer.

One evening we heard a dreadful chorus of howls and yelps, and a terrible, unknown cry of some animal either hurt or in great terror. Somebody said, "The coyotes have got something." But we had no cattle over the creek just then, and thought no more about it. Two or three days later I went across the creek with the children, and as we were picking nuts there was a great crashing in the bush in front of us, and a big black thing lumbered swiftly away. Little Five-year-old cried out, "A bear, mother—a bear!" and daddie, who happened to be within call, came running up, and followed the trail.

And there we found all that was left of poor Jim! For days the coyotes must have dogged him, and then, when his head was down, drinking, they leapt on him, and in his struggles to throw them off and get up the bank his forelegs had sunk deep in the mud, and he must have been worried to death. We had never feared an attack so close to the house. The smell from the carcase had drifted up to the heights and brought Mr. Bruin down for his share, and it was fortunate for us that morning that Bruin had had a meal when we disturbed his nap. The men brought chains and ropes and a team of horses, and hauled out the bones of our poor old

horse. We never had a second visit from the bear, but it was long before we ran about as fearlessly as before.

HOW TO BE HAPPY THOUGH OLD

Perhaps even the modesty of an Editor may be allowed to include here, as part of the joy of the working day, these fragments that meet on his desk : one from a little lady with the world before her, one from a man who was busy doing good before there was a train or a steamship in the world.

MY GRANNIE

Dear Editor, I thought it might interest you to know of my grandma, Mrs. George Durbin, who was one hundred years old on the 30th of April.

She is the loveliest old lady living, and her white hair forms a perfect halo round her head.

The wonderful thing about my grandma is that though old in body she is young mentally, for she talks and laughs as much as ever. Up to just lately she has done very fine needlework, which she cannot do now because her sight is failing.

Out of the hundred years of her life she has lived over sixty at Chew Stoke. If any person in the village is ill, grannie worries all day, wondering if they are better.

The birthday party she had was charming ; it was more like a wedding. Practically the whole village came to see her, besides visitors from Bristol, the nearest town.

CHRISTINE RENDALL-DURBIN

A FRIEND A HUNDRED YEARS OLD

This letter, signed by Mr. Anderson himself, is surely a model for writers a hundred years old.

Dear Mr. Mee, May I send this congratulatory letter to your boys and girls about the educational advantages now placed within their reach ?

In order that you may know who this Senex is who takes this liberty of writing to you and your countless readers, may I say that I am an old retired minister of

the Church of Scotland, and have lately been receiving much gratifying congratulations on having lived a century.

My mental attitude is fittingly expressed by the words of the first five stanzas of the 103rd Psalm, which are almost constantly in my mind :

Praise the Lord, O my soul, and all that is within me
praise his holy Name.

Praise the Lord, O my soul, and forget not all his
benefits ;

Who forgiveth all thine iniquities, and healeth all
thine infirmities ;

Who saveth thy life from destruction, and crowneth
thee with loving-kindness and tender mercies ;

Who satisfieth thy mouth with good things, so that
thy youth is renewed like the eagle's.

My heart is full of profound gratitude to God, and I
am constrained to cherish a desire that you may be
abundantly favoured with the blessings which come from
the Fountain-head of real felicity, and may experience
in your heart the meaning of the words " the peace of
God which passeth all understanding." JOHN ANDERSON

SMITH AND BURLERSON

WHAT a joy it was to print, in the biggest type we
had, the names of Labourer J. Smith and Jim Burlerson,
and to send them all over the world.

They never thought they would be famous. They
were just two ordinary men. Neither ever saw the
other. They lived on separate continents, and one was
a labourer digging with a spade, the other a conductor
clipping tickets on a tram.

But Smith and Burlerson had in them something
many kings and statesmen would be better for ; they had
the secret that would solve all the troubles of this world.

Smith believed in work. You could not stop him
working. They paid him a gratuity and sent him off,

but he came back and picked up his spade. They ordered him away, but he went on digging. They refused to pay him, but he went on digging. They took him before the magistrate, but he came back to dig. He went on digging, without any wages, while one year went and another came. Work he must, and work he did, for this old world must keep on spinning.

Burleson loved his fellow men. He took his tram across the bridge between two quarrelling towns. He came home safely with his money when other men lost theirs. He made his tram a jolly place, in which the sunshine of a smile killed every germ of hate. He was that great ambassador, the Plain Man of Goodwill, and when he died the best folk of these quarrelling towns stood by his grave and shed a tear for him.

This is Labourer Smith's story from Johannesburg.

With dogged persistence, Labourer J. Smith lengthened out his unpaid labour for the town from fifteen to eighteen months. Nobody could stop him. The foreman of the works wrote to the town engineer, the town engineer wrote to the town clerk, and between them an appeal was made to the police authorities. The police sent a constable to warn him; but in a day or two Smith was at the place again, whereupon he was brought before the magistrates *on the charge of being found working!*

But what could the poor magistrates do? Even a lawyer could not argue working into a crime. What the magistrates did was to send Labourer Smith to a doctor; and when the doctor reported that he was sound in mind and body there was nothing left for the police to do but to inform the town that they could do nothing.

Nor could the City Council itself think of anything further. They had tried to get rid of their most faithful servant, who had been discharged with a gratuity and could not, therefore, be re-engaged; and they had failed.

At last it became quite clear that if Johannesburg was prospering out of the work of its faithful servant he was doing badly out of it. He was obviously nearing the end of his resources, and was falling off physically.

Then it was, and not till then, that this unconquerable man won through to victory. The Mayor, the Chairman of the Works Committee, and the Town Engineer had a consultation. How would it be, they asked, if they took on Labourer Smith as a contractor? A good deal of painting needed doing; would Smith undertake it?

"Certainly," replied Mr. Smith, "as it was for the town." And so it was fixed up; and Labourer J. Smith became Contractor J. Smith.

"What about the other fourteen who were discharged when Smith was discharged?" asked an objector.

"Oh," replied the Chairman of the Works Committee, "they will be considered, too, when they have done eighteen months' work for nothing."

And this is Jim Burleson's story from Mexico.

A street-car electric service runs from the city of El Paso on the American side of the Rio Grande, which forms the boundary line, and reaches the smaller Mexican city of Juarez. The international bridge is half-way American and half-way Mexican, the working of the cars being from the American side.

Some years ago feeling grew so hot that the Americans dropped a few shells into the troublesome neighbouring town. The Mexican blood began to boil, and, useful though the cars were, they began to return across the bridge with smashed windows, the conductors without their money-bags, and drivers with terribly black eyes.

To calm feeling down the Electric Company began to make a specially careful choice of the conductors who crossed the bridge with the cars, and in a happy hour they picked for the service Jim Burleson, a quiet, peaceable, kindly-spoken fellow, with enough Spanish to make himself polite to passengers on the Mexican side.

Whoever might come back without his cash and with a black eye, it was never Jim Burleson. He turned

away anger with a smile and a joke, and busied himself only with making his passengers comfortable.

Then Jim took a cold which passed into pneumonia, and quickly he was dead—gone out of this world of stress and strain into that heavenly peace awaiting us. Just a line or two went into the local newspapers, for Jim was only an ordinary man. As he had no relatives near, his mates arranged to bury him decently.

And then a remarkable thing happened. As the funeral party went to the cemetery, on the American side of the river, they saw a great crowd crossing the bridge, a crowd half a mile long, headed by the Mayor of Mexican Juarez, and the Councilmen, and the Customs House officials whose work lay on the bridge. There came, too, many carriages of citizens and crowds of children, for all the schools in Juarez had a holiday, and their children were coming to the funeral. El Paso followed suit, and its mayor and officials went to the cemetery, and there were soldiers from both sides of the river.

There are some very great men alive in the world, some very clever people who get their names into the papers every day. There are some whose fame is on a sure foundation, and some whose names will perish. But among them all is not one so trusted, so believed in, so powerful, that he can move the world to do what Smith and Burleson did : one simple thing that will bring back peace and happiness. If every man would work, bearing his neighbour nothing but goodwill, this world would be like heaven indeed. Yet where is the man in any Government with power to show the people this plain thing ?

Work and Goodwill—these alone can save us. Like golden wheat among the chaff stand out our Smiths and Burlesons. One is taken and the other left, but the spirit of both goes on : Goodwill Burleson and Working Smith.

A man was standing on the kerb in Oxford Street, selling nothings for twopences as fast as he could hand them out to people standing by.

THE PEOPLE WHO WILL BELIEVE ANYTHING

THERE are people rich beyond their dreams, but how many people there are who are rich beyond their brains ! It is pitiful to think that for every knave there is a fool, that every rogue can find a hundred simpletons to play on.

But it sets a man thinking, the sight of a knave in full daylight extracting twopences from people passing by in Oxford-street ; it sets us thinking of that astonishing thing credulity, which floats about the world in every age.

Is there an editor in England, one wonders, who has not had long letters proving that the world is coming to an end ? It is all in the Bible, it is all in the Pyramid, it is all in the prophecies of poor Johanna Southcott. "There shall be wars and rumours of wars," and have we not had them ? "One shall be taken and the other left," and was it not so ? "Ye shall not know summer from winter," and who can tell one from the other ?

And so from end to end of England you will find them, a multitude of people who believe the world is ending, people whose hearts are true, whose minds are sound, whose feelings a man would not hurt for the world.

I know one woman, one of the brainiest little women on the Earth, who believes the world is ending fast. She finds it in the Bible, and all the libraries and laboratories and universities in Europe cannot contradict it. I know another woman who knows when time began, and when it is going to end. She finds it in the Pyramid, and neither mathematics, nor astronomy, nor history, nor human reason can upset it or destroy it.

It is strange, so strange, that in a universe like this the human mind can keep in narrow ways, but even today there are good people everywhere to whom the wonder of this world is nothing. For them there are no tongues in trees, no sermons in stones. They do not hear the voice of God in hills and dales ; they do not see His writing in the stars ; they do not hear Him in the storm ; they do not trace His hand in the slow and sure unfolding of a million years and the thrilling ascent of man. For them the truth is written in one book, and all the universe outside the book is silent and still.

The good lady whose faith is in the Pyramid writes to tell me that "we know nothing by the inspiration of God farther back than 4000 B.C., the exact moment of Time beginning being fixed for us by a geometrical point in the Great Pyramid." It seems to have been "autumnal equinox, full Moon," when Time began 4000 years B.C.

Is it not amazing in these days, with the world full of papers and teachers and books and schools, that people should believe that God in some mysterious way has hid Himself in this Great Pyramid ? Think of that stupendous monument. It weighs seven million tons and has stood six thousand years, and its stones are put together with the same kind of exactness as a watch.

It is nearly a mile round ; it has two hundred courses of limestone laid one above the other, enough to make a carriage-way from England to Newfoundland ; and yet this mighty mass is so constructed that the Pyramid seems almost to fit in with the movements of Nature. If we take the top stone to represent the Sun, and the unit by which they measured to represent a day, the length of the base round the Sun is just a year. The entrance tunnel of the Pyramid points to the North Pole,

and in various ways the structure expresses by its measurements the nature of the Earth's revolutions. What do these things mean? Nobody knows; but it can hardly have been an accident that so many lines on the Pyramid fit in with so many measurements of astronomers.

We need not cease to marvel at all this, but no mystery that lies hidden in the Pyramid entitles us to think that the Hand of God Himself is in it all. It is one of the most gigantic human follies in the world. Into its awful walls of stone are wrought the very lives of men. Men made in the image of God were driven in masses like ants to set up this stupendous weight of stone above the coffin of a king, less useful in the world today than a button or a pin, and with no beauty in it.

For thirty years men worked to pile it up, a hundred thousand men. They must have wasted strength enough to run all the railways of this country for years and years; and they built with all this energy the most terrible monument still standing on the Earth, a place of gloom and death.

And are we to believe that the truth that mankind yearns for, the truth of the beginning and ending of the world, is in this place? There are thousands who believe it. It is, perhaps, the most astounding nonsense the mind can spend itself upon.

Let us seek truth where it lies. Let us see God in the hills and stars and the rivers that run to the sea, and in all that solemn pageantry of life that moves from hour to hour, and from age to age, to its certain end. He stands behind it all through all the countless ages, but our God does not play such a trick on mankind as to hide a note in a heap of stones.

*In the narrow lane we bid Good Night to the old
woodman going home, his work well done, and there
comes to mind the thought of old Daniel Gumbrell,
woodman and good man of a garden that we love.*

DANIEL GUMBRELL AND HIS TREES

Two trees Daniel Gumbrell planted. One of them stands in an orchard where he set it long before the German Empire came into the world ; the other walks about in a hundred places, bearing the good fruit, let us hope, that Daniel Gumbrell meant that it should bear.

To go back to the beginning of these trees we must go back to the beginning of Daniel. For over two generations he was part of the life of Redhill. Even Time itself, passing through these hills to mark the years, might have stood amazed at Daniel Gumbrell working there.

For Daniel was there, in the old garden of the old house, when Time passed through Redhill in the old stage coach. He was there when Time took a ride in the first train that steamed through Redhill on lines of shining steel. He was there when the bicycle came, and when Time stopped at the garden gate in his motor-car. He was there when Time flew over in his aeroplane.

Boys grew up to be men, acorns grew into oaks, the old people at the house went out on the journey from which no traveller returns. Redhill grew into a town, and Reigate grew beside it. King William died and Victoria was crowned. The Victorian Era came into history and passed out of it. Mr. Gladstone did his work and died, King Edward came to the throne and died, and still Daniel Gumbrell trimmed his paths in the old garden, still his two trees grew, their branches spreading far and wide ; and in the shade of one of them Daniel would sit,

while the branches of the other tree would come to him to listen to his story.

And Daniel would tell them—these living branches of his tree—how the snows of seventy-eight winters had fallen since he first came through this garden gate; how cold some of the winters had been, but how every winter had changed to spring, and every spring to summer, so that Time had been a long unfolding of colour and beauty and a constant pouring forth of sweet perfumes.

And so life really has been in this old-world garden, where old Daniel lived with Nature *nearly every day of nearly eighty years*. Every day's work he ever did was done in this old garden. They made up his life, and the story of this good man, one of the millions of ordinary men who come into this world and go out of it without being great or famous, has in it a touch of something which seems to be woven into the spirit of a great nation.

Long ago, in the days when any man walking in the street might be carried off to a British ship, and when rich men might send substitutes to take their place in the Army, a simple countryman took the place of his employer, and went to battle. He saw Napoleon at Waterloo, he helped England to save Europe on that great day, he came home and lived quietly and brought up eight children, and he died when he was eighty years old. And one of his children was Daniel Gumbrell.

Daniel began his working life at nine years old; the yellow page of an old wages book has an entry showing that he worked for 12s. 6d. a week when he was twenty-five; and for nearly eighty years he worked in the quiet garden of "Wiggie," the old farm and homestead at Redhill. Yet he, too, has his monuments, for his two trees stand.

One of them rises from a meadow, where Daniel

Gumbrell, mending a fence in the days of his youth, drove into the ground a piece of willow, four inches across and five feet long. It strengthened the fence between two meadows, but it did more than that, for it took root and grew, and it rose in its might until its trunk was fifteen feet round and its branches spread out for eighty feet ; and in its shade old Daniel would sit.

And his second monument is also a tree—a living tree which walked one day into the old garden of Wiggie, and saw the huge willow standing there, for this living tree has eyes and hands and feet, and something of the very life of Daniel. It is the tree of this man's other lives—a *hundred and thirty men and women and children who have descended directly from Daniel Gumbrell, who have seen him alive and touched his hand.*

A thrilling thing it must have been, one day now long ago, when my friend Arthur Trower walked into his garden to find a crowd of people there, old men and babies in arms, and to realise that Daniel was bringing his children to see his garden. The old man walked in front of his people, *his immortality*, over the scene of his long toil.

He is in his garden no more now, but his life goes marching on. As surely as his tree grows in the meadow, his hundred lives are growing, and will grow. They will carry into the future the life that Daniel gave them from the past, and no man knows where life will lead them. Their story—for us—begins at Waterloo ; it leads us through the sweetest old-fashioned garden that can be seen in an hour's ride from London ; and who shall say where these hundred new chapters shall be written ? Through many a Waterloo, perhaps ; through many a garden ; but always, let us hope, by the straight path Daniel trod.

EVENING

*Now came still evening on, and twilight gray
Had in her sober liverie all things clad.*

Milton

*Now a quietness falls over meadow and hill,
The wings of the wind in the forest are furled ;
The river runs softly, the birds are all still,
And the workers are resting all over the world.*

*The sun sinks down, and we draw round the fire
in the twilight and talk of the things of the day.*

THE TALK BY THE FIRE

A FIRE is a cheerful thing. Put a miserable pessimist in a chair before the fire, and who knows that he may not get up a reasonable man? There is something in a fire that is very near the heart of life.

There are pictures there. There are armies marching, and children dancing, and lions drinking at the pool. There are palm-trees swaying, and poppies blowing, and squirrels hiding nuts.

How we gather round it in the winter nights! How we sit in the dark and watch it flickering, looking deep into the red coals burning, with their changing colours, their living, dancing flames, the hissing and sizzling of the log, the singing of a stream of gas that bursts the prison-house in which it has been pent-up ten million years!

Is there anything else that draws us nearer than the fire? It belongs to our very life, and it is the heart of our English home, the snuggest, jolliest, friendliest sort of place to be found for twenty-five thousand miles.

Do you remember how Robert Louis Stevenson loved the firelight on his books, and how he saw great armies in the fire? Perhaps we see an army in the fire, the army of miners who go down into the earth to get coal. They go down into the darkness to give us light, and they rarely see the sun; and in the mines where they spend their lives as many men have been wounded and injured in twenty-five years as the entire number of men who made up our British armies in the war. A thousand men are killed every year in our mines, and a thousand men are injured every day.

And perhaps we see another picture in the fire; perhaps we see the dark home to which the miner goes from his dark mine. The sun does not follow the miner home; he goes to a little court or alley where the sun cannot go with him. Often he goes to his one-roomed home, where he lives with his wife and five children. A clergyman and a doctor live in good homes, and their little ones are healthy; but for every doctor's child who dies four children of our miners die. One of our dukes has a palace—it stands in a park of 2500 acres; and he has 400 acres of land on which 38,000 mining people live six in a room.

What do you see in the fire? Not picture fancies from a poet's mind, but photographs of the world, terrible and true. A tragic old soul is Old King Coal.

And yet, except for the water that comes out of our taps, is he not the oldest thing we touch every day in our homes? He has a mighty and amazing past. He began his career about ten or twenty million years ago. He raised his head as a vegetable when England in December was as hot as Egypt is in June, and he lay so long and still in his grave in the earth that when we found him again he had become a mineral. Once upon a time he was a tree, a giant tree in a giant forest, with green leaves and flowing sap, and he drank in the sun for ages when Great Britain was a tropical swamp, with hardly a living thing in it resembling anything that we now know.

There may have been a dragon-fly with gorgeous wings—a sort of prophecy of the glorious colours we get from coal today; there may have been a few insects such as those we have, and perhaps there may have crawled in the shady borders of this mighty forest the first crocodile that dared to come ashore. But there

were no human eyes to see coal glow ; there were no birds in the world ; the jolly little three-toed horse had not yet come ; the heavy footsteps of the saurians were not yet printed on the sands of time.

But England was a-building then ; her million million architects were building up the cliffs of Dover at the bottom of the sea, and piling up the chalk of the plain of Kent. The building-up of England was going on while the priceless treasure of her coal was in the making.

Then the land sank, the sea swept over it and buried the gigantic forest ; layer after layer of sand and mud sealed up millions of drowned trees ; masses of living creatures of the sea died and solidified above them. The trees were hardened into mineral form. The pressure and heat of the earth wrought chemical changes, and converted the wood to coal.

That is how the coal got into the earth. Let us see how we began to get it out.

We need not be surprised that every obstacle was put in the way of those who first believed in coal. There is a record somewhere of a man who was hanged for burning coal. Yet all that foolishness was to pass away, and England was to lay the foundations of a great industrial era with the priceless wealth that Nature planted in her mines. Yet what might we have seen down these mines only two lifetimes since ? We might have seen a miner working with his baby sleeping at his side. You would have seen, in almost any mine, scores of children five or six or seven years old, sitting fourteen hours a day in a darkness that could be felt, opening and shutting trap-doors whenever they heard the rumbling wheels of a cart. They were there in the morning before the Sun was up ; they trudged home in the light of the stars.

It is strange to read how Nature put this priceless treasure in the Earth for England ; it is stranger still to read how England gets it out. She crammed the mines with little children ; she ground our very manhood into gold. Most of the children are out of the mines, but thousands are down there still when they should be at school. Long and slow and terrible is the fight against evil in this world, and even yet a great host of men who hew our coal live in homes in which the king would hardly put his pigs.

By coal we were made what we are : let us pray that by the Grace of God we may be saved from doom.

SEEING WHAT DOES NOT HAPPEN

One of us has been hearing, for the hundredth time, of the Indian Rope Trick. What is there to say of it ? Has the trick ever been seen ? What have all the travellers to India to say of it ? Our scientific friend smiles. He has not seen the trick because the trick is not to be seen.

IF a cork is tied to a long black cotton thread, then trailed rather quickly across a carpeted room in a dim light, and made to disappear behind a bookcase or some other article of furniture, and if you then cry "Look ! A mouse !" most people will say they saw a mouse *as long as you have given them the chance to see something*. They saw it, tail and all, they will tell you. Why ? Because the creative power of the mind, the imagination, insists on producing an explanation, and suggests to itself a mouse.

A girl, a thief, and a religious man all saw something in a field one moonlight night. The first said, "It is my friend waiting for me" ; the second said, "There is a policeman ; I must be careful" ; and the third

said, "That is a monk meditating in the evening light." They were all wrong; it was a post for cattle to rub themselves on. Three minds suggested three explanations.

A hard-headed Scotsman, whose business was to build and inspect railway bridges, once told a friend the following experience. He was walking along a country road in Ceylon. A man looking like a native beggar was walking a few paces in front of him. As he was overtaking this man and was one pace or so behind him, the man suddenly called out, "Take care, sahib, a snake!" The traveller saw a large snake glide quickly past his toes, and jumped back. Then the man laughed and said, "There was no snake, sahib." He went to the long grass at the side of the road and picked up a bamboo stick.

Now, one of the most wonderful tricks in India is the Rope Trick. It has existed for ages. Travellers hundreds of years ago reported that they saw it. It was not always exactly the same as described by these people, or even by more modern people, but it is always described as beginning in the same way. The man who is performing the trick takes a long rope and throws the end of the coil up into the air. It unwinds and unwinds until the end is high up in the air. Then a small boy is ordered up the rope, and he disappears in the sky.

Sometimes the performer himself goes up and disappears, but presently returns. Sometimes he takes up a knife, and the limbs of the boy fall down from the sky. Then the man comes down and joins the limbs together, and the boy runs away. Sometimes a dog or a donkey is ordered up the rope, although neither a dog nor a donkey can climb, and it disappears also. Whatever the animal is, human or otherwise, it goes up the rope and disappears; so we are solemnly told by eye-witnesses.

Some of the people who write about it say there is no such trick. Others say they have photographed it, and that the plate showed nothing.

The true explanation is probably that it is all done by *mâyâ*. Now, what is *mâyâ*? The word itself is from Sanskrit, the very ancient language in which the old scriptures and poetry and epics of India are written, originally on palm leaves and birch bark. In one of these it says, "As the magician is never deceived by his own *mâyâ*, so . . ."

That was written more than a thousand years ago. When you mistake a mother-of-pearl button for a silver coin, or a piece of S-shaped rope for a snake, or a cork for a mouse, that is *mâyâ*. Whenever your mind makes a thing appear what it is *not*, that is *mâyâ*. The Indian people say that all this world is a *mâyâ*, because we do not see it as it really is but only as we think it is.

But suppose we do not see a rope and a boy or a donkey, what is it that the eye mistakes for these? We do not know. But perhaps the *name* of these things, spoken with very great determination by a man who has trained himself for many years to do nothing else, can make another mind *see* these things. They are seen with the mind and not with the eye. The man is said to have so trained himself that he actually sees them himself, and when he can actually see them himself he can make other people see them. Very timid people can be made in the dark to see things that others very forcibly declare they can see. Then this man learns to whisper the names of the things he wishes people to see, and ultimately he only *thinks* them with great power, and the people about him *see* them.

Perhaps you have not realised that you cannot think without words? When you see anything its name

flashes into your mind as you become conscious of the object, and so the name of a thing and the thought of it cannot be separated. All magic deals with the power of names, of *words* spoken or thought. As in the Bible we read *In the beginning was the Word*, so in the Indian religions we read *Creation arose through the Word*.

And so we may conclude that there is no boy climbing up the rope. There is only the word of the rope man.

LET US THANK THE PROFITEER

One of us thought we should thank the profiteer. Nobody else seems to think of doing it. Not a word of praise does he get. Then why not thank him ?

It is true he made milk so dear that babies died for want of it. It is true he made coal so dear that the poor shivered and starved by empty grates. It is true he grew enormously rich by making life harder for most of us. But think what he has left us !

The glory of an autumn day costs no more than before the war. The reds and browns and golds in Oxford-street windows are abominable prices, but the reds and browns and golds of the countryside are no dearer. It does not cost a penny more to walk through a wood.

The sunset costs no more, though every time it comes it seems more wonderful. Nobody has put up the price of the light it pours forth all day long.

The air we breathe is as cheap as ever. It is as pure as it was, it rushes through our bodies surging with new life, our oxygen does not cost us more.

Without money and without price the birds still sing. The jay dashes through the wood in his handsome coat ; Robin Redbreast hops about the door ; the tits are in and out among the shrubs ; and the music and gladness

of an autumn day are free for all. The stillness and the sounds cost not a penny more.

No dearer is the vision of the matchless landscapes of this little land of ours, with the hills that go leaping on, the snug little valleys that lie between, the green carpet stretched across a thousand fields, and the trees against the sky. The price of a landscape painting has gone up, but landscapes are as cheap as ever.

The roses cost no more. The yew hedge is like a dream; the red berries of the berberis are hanging like thousands of rubies; the firs are fair beyond compare; the escalonia is clinging to the wall. They came through the war; they have had to fight with poverty and neglect; yet there they stand, and they cost no more.

The stars by night and the Sun by day, the silence in the lonely hills, the dreams that lie hidden in the wood, the wonder of a country lane, the marvel and music and mystery of the world, are as free as in happier days.

Yes, there are things the Profiteer has left us, and we are truly thankful.

THE INEVITABLE AND THE IMPOSSIBLE

One of us believed in the good time coming. The other believed in the bad times that must always be.

"THESE things will always be—they always have been," the wise man said. "It is all inevitable, and your dreams are all impossible."

"Are you sure it is all inevitable?" the dreamer said.

"There is no doubt about it," said the wise man. "Always men have fought each other—and why not? Fighting is in a man. It is his way of holding his own."

"But we rise above the beasts," said the dreamer.

"No, we don't—only in certain things," said the

wise man. "Because it is not convenient to be always fighting, we agree about little things in order to fight about big things. We organise ourselves to get strength to fight. We set up kings and pretend they are gods, and hedge them round with fetishes and superstitions, and fight for them. The end of all our life is fighting. A panther fights, a hyena fights, a man fights. They fight to get to the top; they fight to keep at the top. Panthers, men, or nations—all must fight."

"But even a panther fights to guard its little ones," said the dreamer. "Is it always so ignoble, this fighting? Is there not a sort of fighting higher than the beast's? Has man not risen from the depths? Has he not mounted to the skies? Has there been nothing but hating and killing in that spirit that has fought down all hostility, and lifted him up, and carried him on, and made him lord of life? Look back through age on age, and see the track of human feet strewn all the way with courage and pain. See man fight the great cave bears; see him fight his fellow-man; see him fight house against house, tribe against tribe, race against race, nation against nation, but see in it all the rise from low to high. He begins by fighting for something to eat, for somewhere to live; he comes to fight for the right to keep what is his own, for the right to think and know; and he ends by fighting to give to others the rights he has won for himself."

"He kills one man that another may be free," said the wise man.

"Let us rather say," replied the dreamer, "he kills a tyranny that liberty may live. Men are free to choose the good or ill, and so there came into the world the clashing of the powers of good and evil. But always, in the everlasting fight between them, evil has gone

down. It may not go down today, but tomorrow it is defeated. Greece murdered Socrates, Rome murdered Jesus, England murdered Joan of Arc, but it is written in the annals of eternity that these can never perish. They live in the world ; being dead they yet speak, while their enemies are in the dust.

“ Who fights an unjust cause sows the seed of justice. In the ceaseless clash of forces, the highest will win. The building up is stronger than the breaking down. If you would build anew, you may have to destroy, but it is something better, more lovely, more secure, that you put in its place. You may have to pull down tyranny to build up liberty, to pull down the ugly to build up the beautiful, to pull down from their high places the friends of darkness to build thrones for the friends of light.”

“ A long time your friends of light have been in conquering the world,” said the wise man.

“ Only an hour or two as time really goes,” said the dreamer. “ How many millions of years old is the Sun ? How many uncounted ages have gone to make the rivers and the stars ? Yet civilisation is a few thousand years at most. A thousand years ago, in huge tracts of the British Empire, men used to eat their neighbours ; a hundred years ago wolves prowled in the streets of France ; fifty years ago nobody had seen a motor car ; twenty years ago nobody had heard a voice speaking across the Atlantic. Remember that for thousands of years men rode about no faster than a horse could carry them, and only invented railway trains within the memory of people still alive.

“ If it has taken ten thousand years for clever men to give the world a train, and a ship, and an aeroplane, if great ideas come so slowly that even Shakespeare

believed in witches, can you be surprised that the instinct of war has not been utterly destroyed ? ”

“ Nor will it ever be,” said the wise man. “ War is inevitable.”

“ One thing only is inevitable,” said the man who dreamed of a better world. “ It is inevitable that good should conquer evil, that love should banish hate, that all that is hideous on the Earth should perish in the light of the Sun. It is inevitable that when evil powers attack mankind the soul of man should rise and cast them out. We do not kill wild beasts with gentle words ; we must meet force with force, but be sure that in the end Truth will beat the big gun. It will beat the big gun as surely as the big gun beats the pop-gun.”

“ Ah, yes,” the wise man said ; “ it is a beautiful dream. It is inevitable that men should dream, but it is impossible that their dreams will come true.”

“ Ah, no ; it is only dreams that do come true,” said the dreamer. “ We dream, and wake to see it coming. We dreamed of the overthrow of war, and we see it slowly passing. *We are making your Inevitable impossible.*”

IS SCIENCE TRYING TO SAY WHAT JESUS SAID ?

One of us had been talking to one of the chief physicians in London. “ I begin to think,” the physician said, “ that we shall soon have to revise many of our notions about the human body. It looks almost as if we are only beginning to understand that interesting piece of mechanism.”

HE had been much impressed by a demonstration given to a number of scientists by an investigator of electrical phenomena, seeming to prove that the human body radiates electric power. A coil of unspun silk, suspended in a glass tube and holding at its base a small

cylinder, had been the chief instrument of this demonstration. Regarded with both eyes nothing happened ; but when the glass tube was covered up, except at the place where the little cylinder hung, a glance of the eye through that small opening served to deflect the cylinder from its position. *It moved.*

"Now, it has long been a habit of mine," said the doctor, "when visiting a patient exhausted by an operation, or recovering from severe illness, to sit on the edge of the bed, and to hold the wrist of the patient firmly while I ask questions. The holding of the wrist is just a habit, nothing more ; but this fact has come home to me lately with a new meaning : Whereas most of my patients profess themselves better for my visits, I am apt to find myself exhausted after our talk, and the more good I seem to do my patients the more exhausted I am."

And then he added, with slow emphasis : "You remember the incident in the life of Jesus—*Who touched me ?* Perhaps there is more in that than we know. For if the eye, merely by looking at an object, can move it, is it not possible that some invisible power which issues from us may, if consciously directed, bring about movements in other bodies which have a healing effect ? May it not be that virtue, or power, goes out of us ? "

Since this conversation my friend has discussed the mystery of man's body, and his personality, with many people, and has sent me a summary of these discussions.

First as to the body. Just as physicists have broken down the atom and found that it is composed of invisible ions of electricity, so it would seem that the body of man is a marvellous network of these electrical forces. These tiny forces of electricity, by combining together, have built up out of their invisible selves, by the mysterious

processes of what we call cohesion—the holding-together of things—bodies which are visible. We see our bodies, but the stuff they are built of we do not see.

We think that what we see is all there is to see. We think the visible world is the real world. We think the outside of a thing is the thing itself.

Science knows that it is not so. We may soon have to say that the solid and visible world is the creation of our own senses ; that it has no real existence outside our senses ; that all matter is merely the garment of spirit ; and that there is no reality in the universe except Mind.

Thus it comes about that men begin to think of their bodies as the cloak which Spirit has thrown about itself for a physical experience, and they are now more disposed to consider what the cloak conceals than to spend time in patching it. What does our body conceal ?

We know that the body is composed of atoms, which are themselves composed of tiny charges of electricity. We begin to believe that this electricity radiates into the world about us ; and we reflect with a new interest on the old fact that, while the company of one person does us good and braces us up to feel fit and hopeful, the company of another will weary us to exhaustion.

In two people, formed of the same materials and obeying the same laws, we see a tremendous difference ; it may be so subtle that it expresses itself even in the sound of the voice, the light of the eye, or in the nature of the smile. We know one man from another. And the better we know a man the more conscious do we become of infinite differences in him from all other men. His effect upon us is different. We feel him to be entirely different from all the other people we know.

Now, it would seem probable that this central principle in the human body, which no surgeon has revealed, for which no movements of the brain can account, is not material, but is pure Spirit. Let us call it Personality.

What it comes to is this. In books so written that few ordinary people can understand them, modern thought seems to be trying to utter the ideas that Jesus uttered in language of such exquisite homeliness that plain folk all over the world have been able to understand them.

God is a Spirit, and Man is a Spirit. The things of this world are not the real things. The real things are invisible and eternal. Where your treasure is, there will your heart be also. Lay not up for yourselves treasures upon earth, where moth and rust corrupt, and where thieves break through and steal. Set your affections on things above. The light of the body is the eye. If the light that is in thee be darkness, how great is that darkness! Blessed are the pure in heart, for they shall see God. The Kingdom of Heaven is within you.

There is another saying of Jesus which, puzzling theologians for centuries, begins now to glow with light. Jesus said: *What things soever ye desire, when ye pray, believe that ye receive them, and ye shall have them.*

Now, most people have heard of what we may call the mind cure for bodily ills. It is sometimes called auto-suggestion, a long and awkward new word for that ancient and beautiful word Meditation. It means nothing more nor less than *a talk within ourselves*. Modern investigation has made this a fact of science, has rescued meditation from the realms of fancy, and has done infinite service to religion by turning attention away from outward and visible things to Life's great mystery, the inward and the invisible. Clearly we must know something about the inward and invisible before we can

understand the outward and the visible. We must understand the instrument of understanding before we use it to explain the world in which we find ourselves.

Of this idea of auto-suggestion, the Times has said that

We are but at the very beginning of the knowledge and control of our minds ; but with that beginning an immense hope is dawning upon the world.

It appears to be true, and one wonders if, as the years roll on, there will not come to us all a new understanding of those words of Jesus—*Blessed are they which do hunger and thirst after righteousness, for they shall be filled.* It was He who made the meditation of the soul, that conversation which the Personality holds with itself, the very centre of human existence. Hunger and thirst after righteousness, and righteousness will overflow your life. Believe you receive what you ask, and you will receive it. All the power is in yourself.

Was not Shakespeare thinking of the secret of Jesus when he said : “ The love of Heaven makes us heavenly ? ” A man’s thoughts are his character. We are what we think. Yet the human race is only beginning to understand this revelation of Christianity. So powerful is the spell cast over our senses by the physical world that it is only now, after centuries of struggle and achievement, that we begin to realise the truth of our lives. Happy are the children of this time, for they shall see a great Light.

SEVEN WORDS

Somebody had read a notice of the death of a clergyman which concluded with these words : “ He leaves three daughters ; his son was killed in the War.”

How quickly the last seven words were written ; how quickly they were set up by the compositor ; how

quickly printed and borne away to all parts of the kingdom ; how quickly read !

His son, his only son, was killed in the War.

Was there ever so quick a tale of tragedy as this ? You can imagine the quiet little rectory household twenty years ago : the good clergyman, his devoted wife, three happy girls, and one gallant, sturdy boy, the pride of them all, the joy of the home, the hope of their future.

How much would depend on him when the father was taken ! Not only would the family name be in his keeping, but he would have to take care of his sisters and his mother. They would save money for his education. They would praise him like anything when he brought home a prize, and spur him on to win a scholarship.

And then came the War.

The boy had reached manhood. He had fulfilled all the dreams of his father and mother, the hopes of his three sisters. He was a good Englishman. But the War—the horrible, ghastly War, the wicked War !

He goes, and there are months of agony, months of prayer, and then . . . the telegraph boy knocks at the rectory door.

And the old father bows his head and pines away, and goes out into the darkness to seek for his son.

Boys, you who read these words are that soldier's younger brothers. Do what he would have done in the world if he had not been " killed in the War."

THREE BROTHERS

Three brothers I think of who came to mind today.

One was mine

I passed the square where I left him on that day.

One was Shakespeare's

I passed the church in which he lies by the Thames.

One was yours

News came of him from good Professor Waterman.

A TALE OF TWO BOYS

THIS is a tale of two boys and a bright summer's day in beautiful London Town. On a happy day in May, when England was bathed in the golden sun that makes Little Treasure Island the loveliest country in the world, one of these boys came up to London.

He was every inch a boy, though he was all but nineteen. He was doing well on the paper where I began to be a journalist, and he was full of hope, with the wonderful life of a newspaper man looming in front of him.

But those who knew him love to think of him as just a boy, a boy full of fun and brightness and wit, a merry boy, always teasing somebody, strumming to himself on the piano, the life of the table at home and never a dull companion anywhere. A good, merry English boy he was, beginning to be a good, splendid English man.

And on this sunny day in May he came up to London Town. He had packed up his bag and said goodbye, for he was to stay some weeks in the great city where people come from the ends of the Earth to holiday. He came to a great house in a beautiful square, and he went to bed, for he was tired, and his eyes could hardly see.

His poor, tired eyes ! And the pain in his head that he laughed away ! Something that nobody knew had brought it there—a careless tap on the head, perhaps ;

or a knock or fall that nobody remembered. And now it must be seen to, for it was pressing on the optic nerve, the doctor said, and slowly, slowly the world was darkening before the eyes of this happy English boy.

So they brought him up to London, where the miracle-workers live, and where wonderful dreams come true; and one morning there came to see him one of the noblest men in all the world, a man whose word brought comfort to sad hearts when all other words had failed, a man whose life was more precious to the world than many a ship of war—though war has since destroyed it, for Sir Victor Horsley himself was slain by the ghastly war that has been the curse of the world. He it was who came to see our English boy; he it was who, as our boy slept, hurting not a hair of his head, took from him the terrible thing that had come into his brain and stolen away sight.

And our boy woke up bright and well, bright and brave, for no braver boy than he ever lay on a bed of pain. Again Sir Victor came, again our boy woke up as from a dream, braver and happier still this time, for these wonderful sleepings were over, and his eyes were to see again. Perhaps it would be a week, perhaps two; but quite a good sight to read with was coming back, and there was nothing to do but wait and laugh and be merry, for soon he would be up, and see his mother, and the world.

The green square grew greener, the fountain played in the gardens, and it was June in London. All London came to see the Temple roses.

Yet too sad for a word is life sometimes. In the heart of this beautiful London our brave boy lay, day after day till the days were weeks, week after week till the weeks were months, and I knew, as I walked in the sun, that he would never see the sun again. All that science

could do, all that money could buy, all that love could devise, had failed at last. One thing only did not fail—the strong hope of a boy was a thing that nothing could conquer. No despair could cloud the mind of this English boy, whose last written words, written in the shadow of the Valley of Death, were a merry letter to a little brother. “I think of him lying whistling,” said his nurse; and I, who saw him too, think of him singing.

One fine afternoon I left him, and one sad night I saw him again. Not one pang of pain had he; all unknowing he was drawing nearer to the gates that lead into another world. The clock in the hall ticked away the hours, the long slow night dragged on till morning came, and at last we knew that when the hands of the clock came round again a brave boy would have passed beyond all pain.

Outside, across the square, the great heart of London was beating, though it was one o’clock in the morning and raining fast. A motor-car stood in the rain, waiting for news of the boy who would never hear the rain again.

Suddenly a boy appeared. He was a little fellow, one of those boys you are bound to meet in London; and he was happy. He knew nothing of the sad mission that had brought the motor-car there. He knew simply that he was a king in London at one o’clock in the morning, on his way home to his palace of one room, where he would throw himself down on the floor and sleep the sleep of kings till morning.

He sprang lightly in front of the car, and read out its name aloud. Then he danced. Then he spoke:

“This is a four-cylinder car, isn’t it, sir?”

It was; and the man in the car, nodding Yes, gave the boy a sandwich.

"Thank you, sir," said he, and disappeared. In a minute or two he was back, having munched his sandwich behind the car. He put his hand in his pocket and brought something out.

"This is for you, sir," he said. It was a new box of matches. The man in the car felt for some coppers but could find none, and then this dialogue took place:

The Man in the Car: "Thank you very much, but I haven't any change."

The Boy on the Pavement: "Oh, that's all right, sir; I don't want any money. You've done something for me; I do something for you. I've got plenty of matches, sir, and I've got plenty of money."

"How have you plenty of money?"

"I've had a good turn tonight, sir, and I'm well off. A motor-car stopped in the street there, and the gentleman couldn't get it to go. I told him what to do, and he gave me four shillings."

"Why, what was wrong with the car?"

"The jet of the carburetter was choked, and I told him so. He didn't believe me at first, but we took the carburetter down, and the jet *was* choked."

"But what do you know about cars?"

"Oh, I know a lot about them, sir. I was in a garage."

"Well, where are you now?"

"I am selling matches."

"Isn't that a pity? Why did you leave the garage?"

"Oh, no disgrace, sir! There was nothing to do, and so I had to go."

"Where do you live?"

"At King's Cross, sir, and it is time I was getting home. I am late tonight, you see—my word! it's half-past one! But I have had a good turn. Have these matches, sir! Thank you! Goodnight, sir."

And off this little king went, dancing through the great squares in the rain, to his one room at King's Cross, with a fortune of four shillings in his pocket, and an un-

conquerable gladness in his heart. Who was he ? Where is he ? What will he be ? It is a shame he should be selling matches.

That is the tale of two boys. One was taken, the other left. One went to sleep with a glad heart ; the other passed out of this beautiful world. One is still toiling here, wondering what the end of it all must be ; the other is in the life to which this leads. His poor dark eyes, veiled in his closing days on Earth, have seen the glory of the coming of the Lord.

I know that that is so. I know that every word of this story is true, for this boy who passed was my brother.

SHAKESPEARE'S LITTLE BROTHER

CAN we imagine that day, about ten generations since, when Shakespeare listened to his little brother Edmund saying, " Will, I want to be a player ? " It must have been, for William's plays were the talk of the town, and Edmund, who wanted so much to be a player, must have begged some minor part in them.

Sixteen years younger than William, and the youngest child of their father, Edmund was the baby of the home when Shakespeare was a boy. William had played with him, had watched him in his mother's arms, had carried him on his shoulders to the river and told him wondrous tales. Who does not wish he could have sat at night and heard the tales that Shakespeare told this little lad—perhaps of that old King Lear whose mind was broken in the storm ; perhaps of that Shylock and Antonio and the Daniel come to judgment ; perhaps of the Prince of Denmark, or of that good Hubert who would not with red hot irons put out Prince Arthur's eyes. It is not

every little brother who has a William Shakespeare to tell him bedtime tales.

Yet not even brother William, with the power that enthroned him above all the children of men, with all the love he held for little Edmund, could make that Edmund into a player; and, alas, we know almost nothing of the boy whom Shakespeare must have greatly loved.

He appears on the register of Southwark as 'a player,' and he would act, no doubt, at the famous Globe Theatre which was not far away. Shakespeare himself lived in a narrow street close by, and we may imagine that he would often attend the Church of Saint Saviour, which now we call Southwark Cathedral, in which one day they laid the poet's little brother. Certainly when his brother died, and was buried on the last day of the year 1607 "with a forenoone knell of the great bell," the greatest man of our race would stand by the open grave. The snow would be falling, perhaps, as the old year was dying sadly for our greatest son, and there, standing by his brother's grave, he would summon up remembrance of things past, would think of the happy days with Edmund in the fields round Stratford,

Where often you and I
Upon faint primrose beds were wont to lie.

He would feel that something of this world had passed away for him; we are such stuff as dreams are made on, he would think, as his little brother's life was rounded with a sleep. He knew that "all that lives must die, passing through Nature to Eternity"; but can we not imagine him saying, with almost the words he put on Cleopatra's lips—" *Finish, good brother; the bright day is done, and you are for the dark* " ?

LITTLE BROTHER ISHI

OUT of the Stone Age into Civilisation there burst one day a man who made fire with flints and talked a language nobody knew.

He appeared three years before the Great War broke out, one sunny day in 1911, somewhere in a wild part of California, where the rocks were so sheer and the growths so dense that even explorers knew little about the place. He came in a dramatic hour, when a fierce fire sweeping through the valley destroyed the undergrowth that hid his home, and drove everything to flee for its life. Among the crowd of frightened animals was a queer creature tearing across the country until it reached a town and took refuge in a tree.

It was Ishi, who never before had come in touch with civilised men, who had lived, as all his tribe had lived before him, with flints and stones and creatures of the wild. They took him to that good man of California University, Professor Waterman, who won his friendship and learned to understand him.

Often in the war I thought of Ishi, and wondered what was happening to the little man in his world of incredible wonder ; and now, when the war was over and knowledge could travel through the world again, I heard once more from Professor Waterman. It was one of the sad things that come to an editor's desk, for Ishi was no more.

Ishi is dead, and it was civilisation that killed him. He died of that disease which civilised folk should be ashamed of allowing to exist—tuberculosis. It is thought that there may be somewhere one or two more wandering people of his tribe, but it is almost certain that Ishi is the last of the Yana people of whom the world will hear.

It seems worth while, therefore, to tell the story of the passing of this tribe along with the story of Ishi, who lived fifty-seven years in the Stone Age and five years in the civilised world.

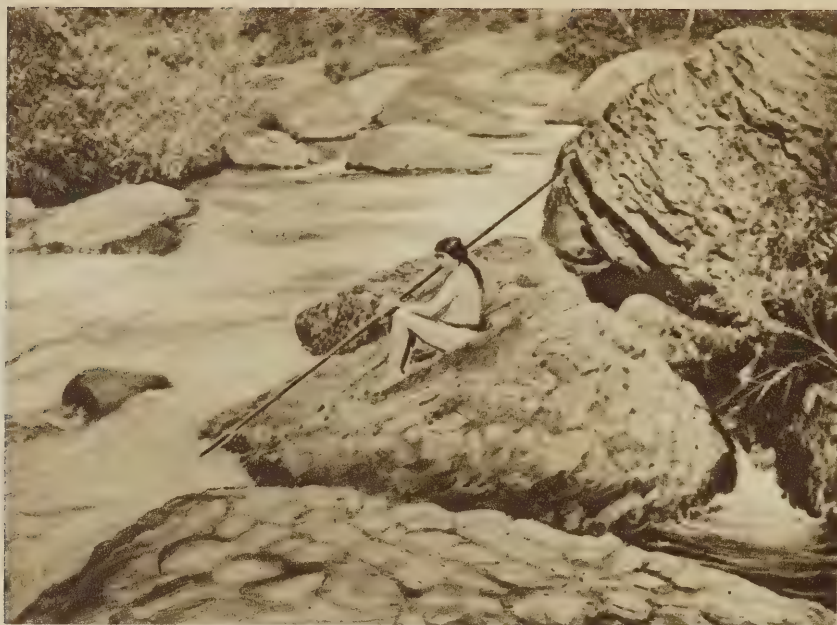
The Yana people lived in the north-east of California, and were first heard of about 1851, the time of the discoveries of gold in that part of the world. One of the trails by which the gold-seekers made their weary way to the diggings ran through Yana territory, a trail still marked by ox-shoes, fragments of old iron from ox-carts, and wooden ox-yokes that lie about. From the first appearance of white men in the country there was war between them and these primitive folk, who lived very much as their ancestors did in the dim ages of the past.

The branch of the Yana Red Indians known as the Yahi was made up of skilful and cunning warriors and hunters; but it happened that in the spring, when their stocks of food were exhausted, the Yahi used to raid the stores of food left in hiding-places for wandering cattle-men; and the time came when the cattlemen took the trail with a fierce resolve. The Yahi tribe must disappear. At daybreak on an August morning in 1865 the cattlemen crept up the valley to the Yahi village. There was no sound but the murmuring of the stream. Suddenly came a sound like the chirp of a sparrow; it was the sign agreed on for the attack. The next instant the valley was filled with the crack of rifles, flashes of fire, and the cries of wounded men and women and children. Bodies fell into the river and were carried away on the current; the water reddened with their blood. Nearly all the Red Indians were killed.

The Yahi hid themselves away. Where the fugitives went was long unknown, but stories of wild Indians living



LITTLE BROTHER ISHI—THE MAN FROM THE STONE AGE STANDS AMAZED AT THE WONDER OF THE MODERN WORLD



Ishi Waiting for a Salmon



Ishi Fishing in a Creek in California

THE MAN WHOM CIVILISATION KILLED—LITTLE BROTHER ISHI

in an almost inaccessible gorge became so frequent that at last it was believed there was a remnant of the Yahi still surviving. In course of time their retreat was found. In the gorge where they lived in hiding from the world was a wilderness of rocks and brushwood and clumps of pepper-trees, with their graceful drooping foliage of vivid green. The walls of the desolate valley were high cliffs of lava stone, often so sheer that they could only be reached with ropes.

To anyone standing on the great stone cliffs, looking downward and across the ravine, it seemed impossible that there should be ways in and out of the canyon. The little stream at the bottom entered through the rocks and disappeared among what seemed to be impenetrable thickets. Yet here the survivors of the Yahi lived, and here they might have gone on living for centuries undisturbed if they had not been driven by hunger to leave their fastness and steal food from cowboys. Here Ishi was taken when he was a boy of eleven, and here he learned all the tricks of those who can only live by keeping their lives a secret from others.

The village was made up of rough homes raised on sticks in the brushwood, cunningly placed so that they could not be seen until the track was found and the bushes pushed aside. Among them was a pit filled with snow in winter-time, so that water could be got without a journey down to the stream. When they did go to the stream to fish or to bring away a supply of water they passed through tunnels in the brushwood, and so could not be seen when they moved about.

It is pathetic to think of these poor folk crouching there in the wilds, afraid of the white man. There is no record of their making any attack; rather they fled when-

ever they were seen by white people. One day in 1894 two hunters saw an Indian running from them as fast as he could go. He ran till he came to the cliffs above the gorge, when the hunters thought they would catch him; but he jumped fearlessly over the edge, landed in a tree, and disappeared from sight. One of the hunters said: "I wouldn't do that for any money in the world."

So the years of the lives of the Yahi folk went by until 1908, when some surveyors were looking for a good place to make an artificial waterfall for supplying electric power. One evening in November two young men were strolling back to camp when one of them said suddenly: "Look! Look over there—quick!"

The other looked, and saw a strange sight. On a rock, above the river a naked Indian stood, poising a spear. He was preparing to spear a fish. Startled by the voice, he looked round, shook his spear at them, and ran. The young men ran too, in the opposite direction. When they told the story in camp most of their companions laughed, but there were those who remembered the stories of Indians living wild in that region, and a party of explorers set out. "How could anybody live here?" one was saying, but as he spoke an arrow whistled past his head, and he believed.

They came at last upon the village. They saw an old man and a woman running over the rocks, and, pushing about in the undergrowth, they found the tents. No one was in them but a very old woman who seemed to be ill. The visitors were kind to her, gave her water, and left her as comfortable as possible. But they stole everything they could find, bows and arrows, skins, baskets, furs, and spears. The next day they went back and found the place deserted. The old woman had been

carried off. Where the Indians had gone it was impossible to guess. Once more they had been obliged to move because white men were after them. For three years nothing was heard of them, and it was thought they had perished.

But one day in 1911 there was a surprising and dramatic appearance in a wild and rocky valley in Deer Creek, California. Early in the morning some men were awakened by the barking of dogs. They found an Indian on the ground in a state of exhaustion, with the dogs still yapping at him. He was picked up and clothed, for he was naked save for a ragged vest. He was given food and made comfortable, and then the police were told of this wild Indian, and asked to take charge of him. They put him in a cell kept for insane people at the county gaol. That seemed to the police to be the most suitable place for Ishi, for our friend Ishi it was who had burst out of the Stone Age in this way.

But Ishi did not stay long in this prison cell. At the University of California a study had been made of Indian languages, and a professor was sent to see if he could make himself understood in the Yana dialect. As soon as Ishi heard him say the word which means yellow pinewood, and saw him touch the bed in the cell to show what he was referring to, the poor man smiled, and he began to calm down. He had been worried by visitors trying to talk to him in various tongues, but Ishi had heard no word of his own language for nearly three years, for since his relatives had died he had been wandering about, living chiefly on berries, leading the life of a really wild man. He had had no communication with any human being, and the marvel is that he had been able to keep himself alive. He was at this time fifty-seven years old, and a splendid specimen of humanity.

So it was that Ishi came out of the Stone Age into Civilisation. And how did he fit into a life so different from the life he had always lived? How did he appreciate the efforts of the university professors to make him comfortable and to compensate him so far as they could for the wrong which had been done to his race? On the whole, he enjoyed his life, as Professor Waterman shows us clearly. There are few stories of life like this in the annals of the Red Indian race, and so we may preserve this story Dr. Waterman sent to me of his friend Ishi, who lived with him. This is the official biography of the life of the Stone Age man in the midst of Civilisation.

In bringing Ishi down to the University, where his home was to be for the rest of his life, it was necessary to take the train.

One fine morning found Ishi and myself, and an attendant Indian and some hundreds of interested palefaces, waiting on the platform for the train to come in. As Number Five came whistling and smoking down the humming rails in a cloud of dust, Ishi wanted to hide behind something. We were standing some distance from the track, as I feared he might be afraid of the engine. He had often seen trains in the distance, but he had not known they ran on tracks. When he saw them he always lay down in the grass or behind a bush until they were out of sight. He visualised a train as some devil-driven, inhuman prodigy.

Here is another fact that illustrates his personal attitude. To a primitive man, what ought to prove most astonishing in a modern city? I would have said at once "The height of the buildings." For Ishi the overwhelming thing about San Francisco was the number of people. That he never got over. Until he came into civilisation the largest number of people he had ever seen together at any one time was five. At first a crowd alarmed him; he never entirely got over his feeling of awe, even when he learned that everybody meant well.

The big buildings he was interested in. He found them edifying, but was not greatly impressed. He mentally compared a towering twelve-storey building, not with his hut in Deer Creek, but with the cliffs and crags of his native mountains. He had something like these buildings stored up in his experience. But to see five thousand human beings alive at once was something undreamed of, and it upset him.

Generally speaking, which is to be considered more interesting and surprising in itself, the ordinary tram-car or the motor-car? For Ishi it was the tram-car every time. I stupidly expected him to grow excited over his first motor-car, as I did over mine. To Ishi, of course, both were miracles, plain and simple. Both the motor-car and the street car were agitated and driven about by some supernatural power; one as much as the other. The street car, however, was the bigger of the two, and Ishi would watch trolley cars by the hour.

Electric lights, door-knobs, safety-pins, typewriters, he considered curious or wonderful according to some mysterious standard of his own. Getting water by turning a knob pleased him boundlessly. On the whole, it was the simple things that gave him most astonishment.

Aeroplanes he took quite philosophically. We took him to see Harry Fowler start to fly across the continent. When the plane was trundled out and the engine started, the Indian was surprised and amused at the uproar it created. The machine was finally launched, and after a long circuit soared back over our heads. As it came overhead we particularly called his attention to it. He was mildly interested. "Saltu?" he said interrogatively, nodding toward the plane, a thousand feet skyward. "White man up there?" When we said "Yes" he laughed a bit, apparently at the white man's funny ways, and let it pass.

Ishi was, however, jarred completely out of his equanimity by a window-shade. On the morning of his second day at the Museum I found him trying to raise the shade to let the sunlight in. It gave me a queer feeling to realise that never in his experience had he

encountered the common roller window-shade. He tried to push it to one side, and it would not go. He pushed it up, and it would not stay. I showed him how to give it a little jerk and let it run up. The subsequent five minutes he utilised for reflection. When I came back he was still trying to figure out where the shade had gone.

His actions were always in perfectly good taste. Even during his first days in civilisation he could be taken comfortably into any company. He had a certain fastidiousness which extended to all his belongings. His effects were kept carefully in order. Not only his apparel, but his arrow-making appliances, his bow, and his other impedimenta were always in perfect array. During the time he lived at my home a certain member of my family urged me to model my own behaviour in such respects after the Indian's shining example.

Ishi was remarkably clever with his hands. In his own way he was a fine workman. He made bows of perfect finish. He could chip arrow-points to perfection; some of his handsomest specimens were made of seltzer bottles, and no more beautiful arrow-points exist than those he made. His finished arrow, including point, shaft, and feathering, is a model of exquisite workmanship.

On the whole he took very kindly to civilisation. He seemed apprehensive at times lest we might send him back ultimately to his wilderness. Once, when we were planning with much enthusiasm to revisit with him his foot-hill home, he filed a number of objections. One was that in the hills there were no chairs. A second was that there were no houses or beds. A third was that there was very little to eat.

He convinced me that there is such a thing as a gentlemanliness which lies outside of all training, and is an expression purely of an inward spirit. It has nothing to do with artificially acquired tricks of behaviour. Ishi was slow to acquire the tricks of social contact. He never learned to shake hands, but he had an innate regard for the other fellow's existence and an inborn considerateness that surpassed in fineness most of the civilised breeding with which I am familiar.

For a number of years Ishi lived at the Museum ; finally he was appointed Museum Helper, so that for the last years of his life he was self-supporting. Here he served as a ready informant. A considerable mass of material was obtained from him concerning his tribe.

Ishi's life came to an end on March 25, 1916, as the result of tuberculosis. A final word would be in place, but I find it difficult to say the right thing. He liked everybody, and everybody liked him. He never wished to go back to the wilds, naturally enough, for there was nothing to go back to. He had, however, to be reassured repeatedly that we had no intention of sending him back. As a matter of fact, I think the closing years were the happiest of his life.

That is the professor's story. So Ishi, born among the rocks in the Stone Age, died in a bed from a disease made by Civilisation. He was sixty-two, and everybody mourned him. Can we wonder at that ? The differences among men are as nothing compared with the likeness between them. Straight from the Stone Age steps Ishi. He comes among Twentieth Century people with his spear and his bow, naked and wild and free, with a mind that has never bent itself to any problem more difficult than trapping a deer. What was likely to happen to a man like that, set down in the heart of a city ?

What happened was that Ishi settled down very well, and very cleverly picked up such small things as the use of a knife and fork. He enjoyed the life about him, and in all great matters he proved himself not merely a ready student but a pattern and example. He taught us that all men, white or red or yellow or brown or black as ink, are much alike in the depths of their beings. If the world had known that there would have been no wars ; until the world understands it well there can be no peace. We are children of one Father, and Ishi was our little brother.

THE STORIES THAT WE TELL

We gather round and tell our tales, some from a village in the north, some from the world of books, and some from far away ; but every one true.

THE EYES THAT COULD NOT SEE

SOME years ago a distinguished Englishman was travelling through Morocco. He was the average good Englishman, and did not lose his humanity and his morality when he went abroad. He was particularly interested in the people of Morocco. He not only treated them as fellow-creatures, but took pains to win their sympathy. He was in every sense an English gentleman.

One night, returning from the desert, he happened to notice the absence of one of his men. He inquired of the others as to his whereabouts.

“ Oh,” they replied, “ we left him in the desert.”

“ Left him in the desert ! But why ? ”

“ He broke his leg, so we left him,” they answered.

The Englishman was at first perplexed, and then indignant. He ordered fresh horses and drove back into the desert. You can imagine their astonishment to find a great chief leaving his home at night to drive into the desert after a common fellow who had broken his leg.

But their surprise was to take a fresh turn. The Englishman found the unfortunate native, who was quietly waiting for death, and, after setting the bone, lifted him into the carriage and brought him back to the town.

Like lightning spread the fame of this miracle-worker. He had mended a broken leg ! That which they believed to be quite incurable was cured by this marvellous Englishman who felt pity for black men and was kind to them. Far and near the people talked of him.

Some time later, in the course of his travels, the Englishman came across the brigand Raisuli, and among the sons of the brigand's men he discovered a boy almost blind through neglect. His pity was aroused. He devoted himself with earnest anxiety to saving the threatened sight, and after a few days was able to lift the scales from the eyes and give back to the poor boy the blessing of vision.

You can well imagine how such an action increased his fame. There was no longer any doubt that this white man was a miracle-worker, a prophet of God who had power over the demons of darkness. He was worshipped and adored.

The news of his fame spread to a distant village, where lived an old man whose youngest son was blind from his birth. The old man loved this son above all his other children, and he had spent the years ever since the boy's birth in praying that his eyes might be opened. He heard of the wonderful Englishman, and regarded his coming to the country as an answer to his prayers. He rose up, took his son with him, and made the long journey to the town where the miracle-worker lived.

Great was his joy when the servants conducted him, without any trouble, into the presence of the white man. He bowed himself in the dust, and prayed that the Englishman would show mercy to him and give sight to his child. His old heart was overflowing with gratitude.

Profoundly moved by the old man's love for the boy, and humbled by the prayer addressed to him, the Englishman anxiously examined the eyes of the child, praying to God that it might be possible to heal them. What was his horror, what was his grief, when he discovered the truth of the case !

As tenderly as possible he broke the sad news to the old man that the case was hopeless, that nothing on Earth could ever be done to give sight to the blind eyes.

The old man listened in bewilderment.

Again, slowly and simply and very carefully, the Englishman explained that the boy's eyes could never see, but the old man shook his head, not comprehending. Some natives standing by explained to him what the white man had said. Still he was like one dazed and stunned.

Then the blind boy himself turned and explained. It must have been very sad to listen to those words.

For a moment the old man stood in confusion. Then suddenly he burst into violent tears, tore his clothes, and exclaimed: "You cured the other boy! You gave sight to him. Then why do you not give sight to this boy, my son? He has done no evil. He is good. He is sweet. He prays to Allah. Why do you not heal him? Why do you withhold the mercy? Ah, I know! You do not love my son. He does not please you. You are angry with him. You despise him. You think he is a dog—a dog! Yes, that is why you will not open his eyes. You think he is a dog!"

And the old man took the boy by the hand and went out of the house broken-hearted. Nothing could make him realise the truth. Nothing could make him understand that the seat of sight behind the eye was gone. The old man was as blind to the truth as his son was blind to the glory of the Earth.

And no doubt in Morocco you have to this day an old, angry man telling everyone he meets of the cruel Englishman who refused to open his boy's eyes; while in a country house in England you have an Englishman looking after his estate, entertaining his friends, and

sometimes thinking of the tragic figure crying out to him from the agony of a disappointed heart: "That is why you will not open his eyes—you think he is a dog!"

What a strange world it is! The nations touch each other and mingle; civilisation and barbarism come into contact; but the difference which divided us all from the beginning still exists—the difference of vision. There are some that would not be persuaded though one rose from the dead; there are many who, having eyes, see not; there are others who, though seeing, see a different world from ours. Is not all life a gradual opening of the eyes? And is it not true that only those who have faith really see something of the truth of things?

ZACHARIAH GOES HOME

You would hardly have noticed him had he been alive; it is not likely that he would ever have done anything to get into the papers. But Zachariah is dead, and we can all be interested in him now.

Nobody knew much about him. He was in the hospital, but save that somebody took him there, and that once some very strange people called to see him, nobody knew what sort of world the little man belonged to, or if it mattered much whether Zachariah lived or died. He died, and they sent a telegram to the people who had called.

It was the telegram that found out for them the sort of world the corpse belonged to. The address on the buff envelope led the messenger into a field outside a tiny village, where Zachariah's caravan had rested. A dozen gipsies sat about. There were old men and women working and talking, and little children laughing, and the messenger gave the telegram to one of the men.

Strange, when you think of it, the coming of a telegram from the modern world to these primitive people our world has passed by. I remember such a group as this sitting helpless at a signpost in the heart of Kent, waiting for somebody to pass who would read its mystic letters and translate for them. Signposts and telegrams are for those who understand this scientific age; not for Romany.

The gipsy man begged that the messenger would read the paper for him, and the messenger read it. It was to say that Zachariah was dead. There was no weeping and wailing, but the little world seemed sorry. It moved about more quietly. The father went into the village and crept up shyly to the carpenter, begging that he would make a small coffin. He need not take much trouble; a very plain coffin would do. He need not trouble to send it: the father would fetch it. He need not be afraid they would not pay for it: he had brought the money with him.

They laid the body in the coffin and put it on a cart, and all the gipsies came behind. The few words spoken by the minister were perhaps as Greek to them. Only one of them said a word before they went away. A woman stood by the grave when the others had gone, looked down for a moment, and turned away sadly, saying as she went, "Good afternoon, Zachariah." She must have loved to see him playing in the fields.

THE STRICKEN SCHOLAR

ONE of the greatest English scholars was taken from the world when Sir James Murray died, with his Oxford Dictionary still unfinished.

People used to write from all parts of the world to Dr. Murray telling him of words they had heard, giving

him explanations of others, and one of the most valuable of these contributors was a scholar who wrote as Dr. W. C. Minor, of Crowthorne, a small village in Berkshire. Again and again Dr. Minor wrote, always sending some valuable addition to the work, until the editor came to regard him as one of the most ingenious and reliable of his unknown friends. So valuable were the stranger's contributions—numbering thousands—that the editor suggested to the University that the stranger should be specially recognised. Dr. Murray was authorised to invite Dr. Minor to be the guest of the University for a week.

Dr. Minor replied that he was prevented by physical reasons from accepting the invitation, but that he would be delighted if Dr. Murray would be his guest.

The great scholar accepted the invitation, and travelled by train to Wellington College Station, where he was met by a man in livery with a carriage and pair, in which he was driven to a huge brick building, where he was ushered into a very official-looking apartment. There sat a gentleman whom the visitor took to be his friend.

“Dr. Minor, I think?” said he.

“No,” said the other, “but he is here. This is Broadmoor Criminal Lunatic Asylum, and I am the Governor.”

And then an amazing story was told. Dr. Minor was an American of great intellectual powers. His mind had given way some years before, and in a fit of madness he had killed a man in a London street. He was sent to Broadmoor, and there his shattered mind was gradually restored, his love of learning returned, and he begged to be supplied with books. The work of making the dictionary appealed to him, and he had devoted to his self-appointed task the whole of his mental energies. The

asylum authorities knew all about his work, and of Sir James Murray's visit.

When the story was ended the Governor said : " And now, if you are not unnerved by what I have told you, I will take you to Dr. Minor, who is waiting for you with great eagerness." Sir James was not too unnerved to visit his poor helper, and the interview which followed was deeply impressive and pathetic. It is comforting to know that the afflicted scholar was afterwards removed, quite cured, to a private hospital on the banks of the Thames, where he ended his days in peaceful forgetfulness.

FRANCES SLOCUM

IN the year 1777 a Quaker called Joseph Slocum settled with his wife and family by the Susquehanna River. The valley was often visited by bands of Red Indians, but the peaceable household of the Slocums was for a long time left alone.

One day the father and the elder boys were out hay-making when a group of Red Indians bore down upon the house, and caught sight of Frances, a little girl of five, hiding under the stairs. One of them flung her over his shoulder, and as they ran off the child was crying pitifully for her mother. But by the time the alarm was given the fleet-footed Indians were away in the mountains.

A little before Christmas of that year the poor mother lost her husband and her father. They were feeding cattle quite near a settlement when a party of Delawares leaped out and murdered them.

All the rest of her days the unhappy woman spent in trying to recover her lost child. She made many long journeys, and offered large rewards, but not an Indian would betray the whereabouts of the white girl.

Twice the brothers heard of a young white woman living as an Indian, but on both occasions they had the bitter disappointment of meeting a stranger.

Nearly seventy years passed. The postmaster of Lancaster, in Pennsylvania, had died, and his wife was sorting his papers when she came across a letter from a Colonel Ewing in Indiana. He wrote as a stranger, asking the postmaster if he would give publicity to his discovery.

On the shores of the Wabash river, said the colonel, he had met with a very old white woman who, on being questioned, said that she would tell him her true history now that all her kindred must be dead, and none could force her to leave her Indian home. She described being carried off, and gave an account of her father's Quaker clothes and many details of her home; and, although she could not remember any English, she said her name had been Slocum. The postmaster had evidently thought it a wild story, but his wife now persuaded a newspaper to print it. Two brothers and a sister of Frances were still alive, though they had not long given up what seemed a hopeless quest, and on reading the colonel's story they set off at once and *found their sister*. It must have been a strange meeting those four old people had in the Indian camp, the two sisters and the two brothers meeting after two generations.

The long-lost girl's identity was established beyond all question by a misshapen finger. Her memory was perfect. The squaw and the Quakers talked long about their childhood—through an interpreter. Frances told them that her life had been very happy. She had been adopted by a party of Delawares, and married one, who was now dead. She lived with her daughters, and was

a wealthy and powerful member of the tribe. Nothing could induce her to leave the Red people.

So the brothers and sisters parted once more. They had been little children together; seventy years had passed, and they had met again once more, two old men and two old women; now they were to part for ever, after this fleeting memory of the long ago. By an Act of Congress, Ma-Con-A-Qua, or Frances Slocum, was granted a tract of land, and on her death she was given a Christian burial at the place where the Mississinewa and Wabash rivers join on their way to the sea.

She had been happy enough. The tragedy was not hers; it was her mother's—she who died with that last memory of her child crying to her in vain.

THE OLD MAN GOING BLIND

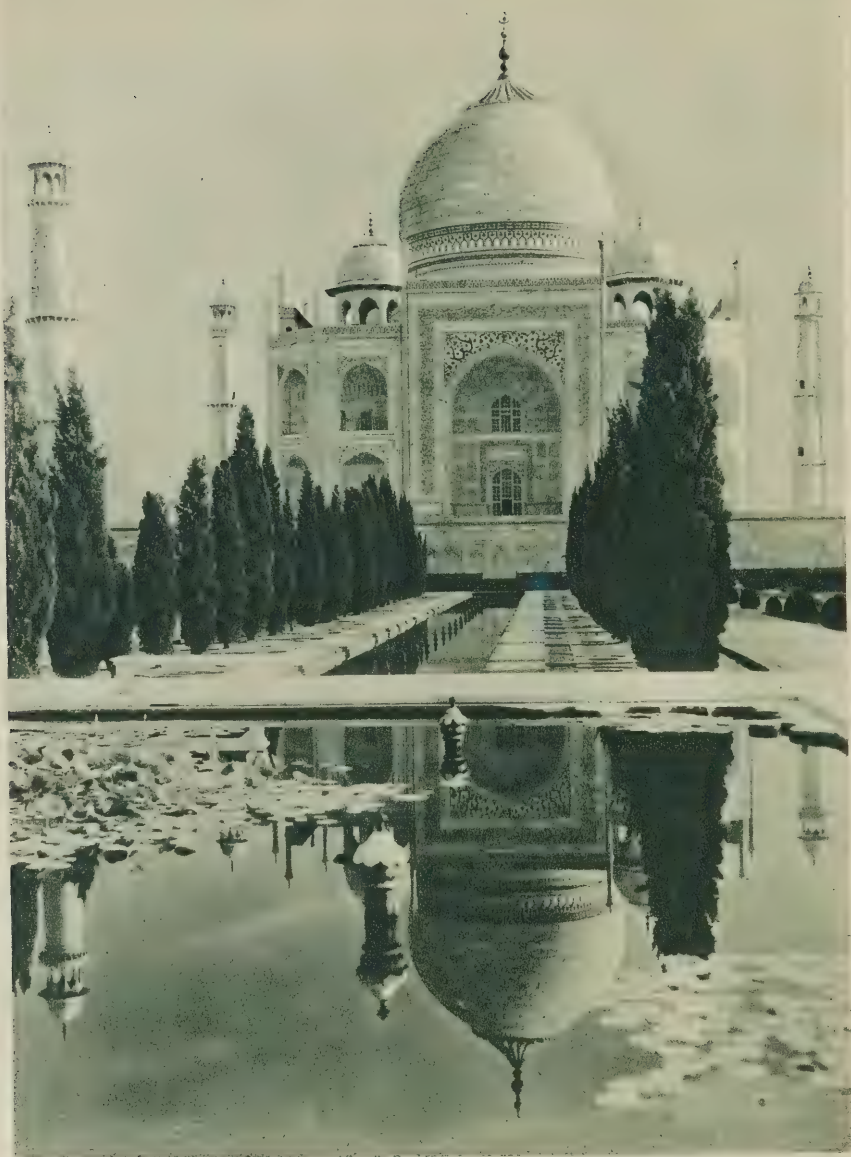
DID this man sin or his father, that he is going blind? It was not a sin at all, but seeing him groping his way along the village street, the oddness of it comes to mind, and one wonders how many tales like this our villages could tell.

It was twenty years ago, and his farm was doing well. He would take unto himself a wife in his prosperity, and who, of all the patient womenfolk about him, better than the useful Catherine who kept his house. Catherine was willing and Catherine was wise. She might have done many things worse.

But Catherine was willing and Catherine was wilful. It happened, on the day before the great day came, that the bride of tomorrow was cleaning the step in the rain. It was not raining much, perhaps, but it is wrong to wash the doorstep in the rain on the eve of your wedding-day, and the farmer called the good woman to come in.



MUMTAZ MAHAL THE SLEEPING LADY OF TAJ MAHAL—FROM MR. LOWELL-THOMAS'S
WONDERFUL TRAVELOGUE PICTURES OF INDIA



THE LOVELIEST BUILDING IN THE EAST, THE TAJ MAHAL

She must not wash the step in the rain. But Catherine was wilful ; she *would* wash the step in the rain.

And so it all began. It was in the days before the equality of sexes came, and a man must have his way. The cab did not call the next morning ; there was no wedding at the church. Catherine went to live at the other end of the village ; the farmer found another wife.

The long village street has been between them twenty years, and they have rarely met. Catherine is single still, an invalid ; and the old man is going blind. He has sold his trap, and will see his farm no more. Every Sunday afternoon, at two o'clock, whether it is March or August or December, whether it is rain or fine, if you should pass his house, you will hear the harmonium playing and his obedient wife singing " O happy day that fixed my choice." It is always that hymn and always that hour. But there is no singing at the other end of the village. Catherine is sitting alone.

THE SLEEPING LADY OF TAJ MAHAL

Not quite three centuries ago Ustad Isa was building the immortal monument under which an Indian lady sleeps.

You may never have heard the name of Ustad Isa ; you may never have heard the name of the sleeper under his great domes—Arjumand Banu Bejam ; and yet these names have lived while centuries have gone, and perhaps may live as long as men will talk of India, for she is the sleeping lady of Taj Mahal, and he is its builder.

A wondrous thing to look upon is Taj Mahal, the unmatched glory of a dazzling empire. There is nothing more fair on Earth ; it rises from a garden as if it were a flower growing there. But wonderful and more lovely yet is the story of the Taj, for this matchless monument,

this thing of beauty and this joy for ever, was set up for the everlasting glory of a woman in a land where woman held a very lowly place.

An emperor of India loved a beautiful girl, who saved him from evil and helped him to rule his people well, so that when she died his heart was broken, and, caring nothing how little his people thought of woman, he set up this place for her to sleep in, wishing it to be the loveliest resting-place on Earth. And so it is.

By the city of Agra, against a blue sky and a mass of green trees, the dome of Taj Mahal rises amid its minarets. Rows of slim cypresses lead to this loveliest of all the buildings of Hindustan, and between the trees lies a stretch of still water, banked in marble.

All the romance of old Indian life seems to have been built into this pearl-white wonder of art. The Taj Mahal is the grave of a woman, and it stands alike for the glory of the past and the promise of the future of Asia. Far beyond India its influence extends. Men and women on the frontier of China lovingly talk of it. Craftsmen in Samarkand and Teheran draw pride from it. Their fathers helped to build it when Sir Christopher Wren was a boy at school.

It is to a woman of a wild barbaric race that this monument was built. She was a Mongol, and her race—wandering, tent-dwelling, horse-breeding savages of the Asian desert—had made one of their swoops on civilised countries. Under a descendant of Tamerlane they were throned in power in India and the Mongol girl was taken in marriage in 1612 by a Mongol prince of Agra, who changed her name from Arjumand Banu Bejam to Mumtaz Mahal—the crown of the palace. There was no flattery in this title, for Mumtaz was really

the crown of her race. Not only was she a girl of great beauty, but she had a fine mind and character. She guided her husband in his undertakings, and was a working companion to him.

The Mongols were then lords of a great empire. They built their palaces for show, and lived in the open air in gardens. Their women, strong and self-reliant, were determined not to sink to the level of the women about them.

Mumtaz became the leader of these women in the first part of the seventeenth century. At nineteen she was married to the royal prince of Agra, and she set to work to reform the prince and his court.

One of her aunts was the real ruler of India, being married to a wretched emperor whose soul and body she was trying to save. Mumtaz undertook the same task with the emperor's heir, and never left his side. She went with him on long journeys, and into battle, keeping him charmed with her wit and beauty while she guided his actions. When her husband became emperor of India, under the title of Shah Jehan, Mumtaz took over a large share in the actual work of government, and her influence was used to win the hearts of the people by kindness and good administration. The end of the Mogul Empire began in 1630, when this great woman died in the prime of life, while with her husband on the battlefield.

Shah Jehan knew what he had lost. He felt helpless without his wife. He refused to see his Ministers or to go on with the war. For two weeks he held out, and at last, when he was induced to resume the power of government, he ordered his court into mourning. No music, no feasts, no fine clothes or jewels were allowed for two years. Jehan was ever ready to break any man or woman who used forbidden luxuries in this sad period.

His wife had struggled to help the common people by discouraging the extravagance of the Mongol nobles, and he saw that her wishes were carried out. He saved all he could, but all he saved he resolved to spend on a monument to the woman who had saved himself.

He chose a garden for his wife to sleep in, by the river Jumna. He had drawings made of the most famous buildings on the Earth. He brought artists from Italy, Constantinople, Mesopotamia, and other lands. A man who seems to have been part Greek, part Turk, and part Persian won the competition. His name was Ustad Isa. Masons came from Bagdad, from the Ganges, and from the Punjab. Builders came from Anatolia and Samarkand, and mosaic workers from Italy and Persia. Twenty thousand men were kept working seventeen years, and precious stones were brought from China, Persia, Tibet, and Arabia. A French silversmith made two silver doors, and a sheet of pearls was designed to cover the tomb. A fortune was spent on rich silk carpets, golden lamps, and jewelled candlesticks, and a gold screen studded with gems was made to enclose the tomb. It is said the whole cost of the Taj Mahal was not less than four million pounds.

All this seemed like the gorgeousness of savage taste. In England John Milton heard of the building of the Taj, and sang of the Orient showering on her kings barbaric gold and pearl. But the great Mongols had a fineness of mind amid all their magnificence. Perhaps their love of natural beauty kept their sense delicate and true. Jehan, at any rate, had fine taste, and he himself directed the design and decoration of the Taj, so that one of the most barbaric races in the world gave mankind a supreme lesson in art and beauty.

The design is simple, and depends for its effect on spacing and proportion, and on the art of leading the eye by landscape gardening to the appreciation of the great work in stone. All the main lines are broad and simple. From a marble terrace rises the white dome, flanked on both sides by two noble mosques of red sandstone, each inlaid with white marble. Four minarets, like court ladies attending their empress, stand about the dome, and the distant effect is like that of a graceful woman whose bearing and silhouette please the eye before we come near enough to observe her fine features and delicate attire. When the shrine is closely approached, its infinite wealth of decoration captures the mind with a gust of delight. Though the marble seems smooth in the distance, there are cut into it low reliefs of lilies, tulips, and crown imperials. The panels are framed in jasper, coral, turquoise, sardonyx, and other precious stones, set by the greatest craftsmen of the age.

Within the tomb a soft light plays on a screen of marble tracery, which now replaces the original screen of gold. It is one of the most exquisite things in the world, a lacework of fine stone on which artists laboured for ten years in a golden age of art. Enclosed in the screen are the tombs of Mumtaz Mahal and Shah Jehan, who sleep in a vault beneath. Everlasting Persian flowers are wrought in the white marble of the tomb of Mumtaz.

Jehan intended that soft melodies and religious chants should echo for ever in this great monument. When a loud noise is made in the chamber of the tomb there is no response, but if a few notes are softly sung the music is repeated in echoing harmonies, until it seems as if the choir of heaven were singing from the dome.

Such is Taj Mahal, the loveliest monument on Earth.

*Oft in the stilly night,
Ere slumber's chain has bound me,
Fond memory brings the light
Of other days around me.*

MEMORIES

THE firelight glows, and the memories come. How the river of life flows past again as we sit, and wonder, and remember ! The friends of yesterday that we shall see no more, the far-off places that we visited long ago, the pictures in the gallery, the monuments that stand in the sun and see the world go by, the books that thrilled us to laughter and tears, the dreams and dreams and dreams—how they all come back in the evening shadows and the flickering light of the fire !

WHY BE MISERABLE ?

I think of the Merry Cobbler who wrote to me on the back of one of his window posters, announcing in the height of the profiteering days, "What about it ? Look at these : a shilling a pair."

WE can imagine the rows of old boots that decked the cobbler's window ; we can see the people peering in and feeling for their shillings ; we can see the Merry Cobbler sitting on a stool, mending well and thinking well, as cobblers do.

Well, on the back of this paper is a letter from the cobbler, an unknown friend. He has been reading a letter from an unhappy Manchester workman who wrote to the Children's Newspaper to ask if he should leave his native land, seeing that after struggling for forty years he has not five pounds of his own, has to live in a slum, and cannot buy a new suit or go for a holiday, and so is rather miserable.

“Look at it anyhow,” says our cobbler, “it is a shame. *But why be miserable?*” And then our Merry Cobbler tells his story.

I have been a Salvation Army bandsman nearly thirty years (he says). I have repaired scores of thousands of pairs of boots. I have known the great sorrow of being out of work, almost distracted; and terrible thoughts come into your mind just then. I have sold books by the score to get bread for the children, and that was like tearing my heart out, for I love books. I have had three suits in pawn, and played in the band with patched-up clothes. I have had my Salvation Army suit for eighteen years, and wear it still.

In twenty-one years of married life my wife and I have had one holiday only. Once we got away for four days. Once we went to Grimsby for a day, and once to Skegness; that is all the change we have ever seen—six days in 21 years. And I am afraid I shall never save five pounds.

Yet there is no one in this town happier than I am. I travel all over the world in books, but if I left my native land I should still have to work and see no more of this splendid world than I do here.

So am I downhearted? Not a bit of it! I have work to do, and the trousers of my Salvation Army suit will last me for five years, so that I am

Yours, still smiling. . . .

P.S. I am only middling with a pen, but you should hear me play the drum.

I do not know my friend's name; all I know is that we shook hands somewhere once and he is proud to have his children's portraits in the Children's Encyclopedia. But who would not love to see him in his cobbler's shop? He must be brother to that happy man a king sent out his couriers to seek. You remember the king who was sick, and was told he would be well if

he slept one night in the shirt of a happy man :

Wide o'er the realm the couriers rode,
And fast their horses ran ;
And many they saw and to many they spoke,
But they found no happy man.

At last they found a beggar whistling at a gate, and offered him a hundred ducats for the loan of his shirt :

The merry blackguard lay back on the grass,
And laughed till his face was black.

" I would do it, God wot," and he roared with the fun,
" But I haven't a shirt to my back."

Our Merry Cobbler has a shirt to his back, a pair of trousers that will last five years, and a heart as good as gold, and who among us would not like to hear him play the drum ?

A FIGHTER FOR ENGLAND

From a garden of peace, from a heart at peace, comes a greeting from the Sussex downs, signed " Vera Pragnell " ; and the mind leaps back to the night, so long ago, when this letter lay on my desk, signed also " Vera Pragnell."

Perhaps to those of us who cannot die for England the thought of those who do may stir our hearts that we may live for her.

My father has gone . . . Fiercely he fought on the battlefield of life, with head thrown back and all his soul burning in his fearless eyes. The blood oozed out from his beating heart, but he only laughed and heeded it not, for he fought for England and he knew the thing at stake.

Forward he went, strong and handsome and unafraid. Though anxious voices bade him stay, he shook his head, for he worked for England. Above the cruel din his voice rang out, so strong and true, and always he seemed to say : " I am fighting for you and for England." Then at last there came a night when he wandered home weary and broken, his strength all spent ; and he laid down his sword and his life.

Deep in his heart was a corner in which he treasured all God's loveliest things—sweet memories, a poem, the scent of flowers, and perhaps a child's laughter. So we brought him home and laid him where the sunshine forced its way between the blinds, and the birds sang softly in the trees.

His room was like a garden full of flowers, and it seemed as if each rose, each violet, was the spirit of someone he had helped or raised a little higher. Here, amid all this glory, his crimson uniform stood out and seemed to say: "We have done our work for England, and I think we've earned our rest." His faithful hound crept in, with big tears gathering in his brown eyes, and a bee came, too, and hummed its song.

Tender hands lined the grave with laurels from his garden, and close by the children play, in a quiet park. He will hear their merry laughter, will see their faces, and I know he will thank God for the children in the park.

Yes, there came a night when he wandered home weary and broken, with all his strength gone, when he laid down his sword and his life and gave them to England. And, oh, the great light in his eyes!

He fell as a soldier, this father of mine, steadfast, unflinching, brave, and strong. But his wounds are healed, and his voice is true as he cries to us still: "I am fighting for England, our England."

POOR OLD LADY

We remember the poor old lady of whom we heard the other day.

SHE had lived for fifty-one years in a Suffolk workhouse. She entered at nineteen with her parents. They died; she knew no other relatives, and she had nowhere else to go.

She never had anyone to visit her, and she never received a letter. Then one day, just before she died, there came for her a postcard, sent as a kindly thought by one of the workhouse nurses who was having her holiday and realised what pleasure it would give the old woman to know she was remembered.

For some days she could think of nothing but her postcard. She kept it in her hand, would not let it go even while she slept, and died clutching it. It was buried with her.

THE LITTLE CHILD IN RAGS

I think of that bright little lady whose name I tried in vain to find. She sits in rags, but she is made of gold, and this dear land would be a paradise if we were all like her.

ALL we know of her is that fine picture we have of her at school; our Education Minister was at an elementary school in East London, and was asked what he would like to see or hear. Recitations, he said.

And so our little lady was called forth, a lassie clothed in rags, as poor as poor could be. But she was marvellously rich in the power to feel and understand; and she had something that crowds of dull millionaires would like to buy. She stood before our Education Minister and recited for him Portia's speech on Mercy. Listen to those splendid words:

The quality of mercy is not strained.
 It droppeth as the gentle rain^d from heaven
 Upon the place beneath; it is twice blest;
 It blesseth him that gives and him that takes:
 'Tis mightiest in the mightiest; it becomes
 The throned monarch better than his crown;
 His sceptre shows the force of temporal power,
 The attribute to awe and majesty,
 Wherein doth sit the dread and fear of kings;

But mercy is above this sceptred sway ;
It is enthronèd in the hearts of kings,
It is an attribute to God himself ;
And earthly power doth then show likest God's
When mercy seasons justice.

So our little child in rags rolled out the music of Shakespeare ; she recited the famous speech superbly, her body thrilling with emotion at the poetry, so that it could not have been done better by the most accomplished artist. But what one likes about this story most of all is that our Minister of Education left this school inspired and lifted up. A little child had given him a new hope, and he went back to his high place in the world believing that deep down in our people is something that will save us yet.

This country, says he, has always been a great nation of artists, and it is only part of our cleverness to go about the world saying how stupid we are : in reality our people are a clever race, and it is nonsense to say we are not capable of turning out men and women as good as any on the Earth.

Is it not a lovely picture, this little girl from poorest London fascinating the ruler of our schools and urging him forth to declare on behalf of our race that we are not stupid, but clever ?

A little child shall lead them, we are told, and who can say how far our lives may reach ?

JIMMIE PANNIKIN

I think of Jimmie Pannikin, the Big Australian who loved to find my papers in the little Bush schools he loved so well.

THERE is an empty place in Australia, the place where Jimmie Pannikin used to be.

I love to think of this great friend of the little Bush schools of New South Wales tramping or driving or riding

through Australia's great spaces, with a merry laugh, a bit of optimism, and an uplifting word for everybody he came across. He had been teaching in Australia for forty years, and what he did not understand of teaching problems there is hardly worth troubling about. He must have been the best-known school inspector for hundreds of miles, and no child was ever afraid of him. He would quote Victor Hugo's saying that when you open a school you close a prison, and he would tell the politicians that Playgrounds are cheaper than Prisons.

Believing in Australia, he gave his life to building up for her a great people and a great tradition. He felt that the best service he could render his country was to make its children happy, and educate their minds and stir their souls. He believed in education as something more than the teaching of arithmetic. Education must fail altogether, he said, unless it is spiritual. He once read of a man who wrote, "If I had but two loaves of bread, I would sell one and buy white hyacinths to feed my soul," and he would quote it again and again.

He loved the toiling people who were building up Australia and making gardens from its barren spaces. He once wrote regretting that he had no manual training, and he would say of himself that it was a sight to make workmen weep when he took up a saw, or a hammer, or a chisel. Ah, but he builded better than he knew. He lived on the high level of his own philosophy that "the more we believe in our country the more we shall help it, the more we help it the greater it will grow, and those who do not want it to be great ought to get out of it and stop out." Character, he would say, grows out of circumstances; from the same stuff one man builds a

palace and another builds a hovel. And all through his life this big Australian was saying, "Brothers, let us build Australian palaces." He helped to build up the great tradition that is gathering round about his country. He was an Anzac before the Anzacs.

I never saw him, but he loved the papers that I make, and would carry them with him into little Bush schools; and he would write to me about the children there, and the light of the future that he saw in their eyes. "Yes, brother," he wrote, echoing some words I had written to him, "we *shall* want all these little men and women some day, when the shadow has been lifted from the world and our British brotherhood is a brotherhood indeed. God be with us." Now God is with him, and he is with God, for his strength gave out at last, and the Bush schools will see him no more.

But they will remember him, for they were part of him as he is part of them. He was Donald Fraser on the school record, but people love him by the name in which he wrote his little books and gave his lectures.

Nature was a very joy to him. He loved every blade of grass and every tree and every running brook, and he was what he was because the elements so mixed in him that Nature, amid all her Australian glory, could look up to him and say, "This was a man."

THE MAN WHO WALKED PAST THE NORTH POLE

From a packet of old letters I take up one from a man who crowned the quest of ages. It was from Admiral Peary, written just after he had found the North Pole. What a tale it brings to mind!

THE cruel White North is littered with the bones of hundreds of valiant souls who sought the Pole in vain;

the man who found it, who first stood there, has died in his bed eleven years after.

Men have been seeking the Farthest North for a thousand years, and America was first sighted by an Arctic exploring party 860 years before Admiral Peary was born. In later days our Elizabethan seamen used to drive tiny ships up north, seeking a short trip to China, with matter-of-fact instructions to "take in the North Pole" on their way. No place on the Earth's surface has claimed so many lives as this Pole.

Peary gave half his life to finding it, and during the twenty-three years preceding his triumph he actually lived in the Arctic for twelve years. He was defeated again and again. He suffered all that a man who lived to tell the tale could suffer.

Again and again he was starving, and had to eat his dogs, even their harness. Once he was saved from death by coming upon food left fifteen years before. He persevered, always learning, always stiffening his resolve. One frightful attack of frost-bite deprived him of seven of his toes, but he marched faster and farther than ever at his next attempt, and his eighth expedition was a glittering triumph.

Little by little he reduced the supporting parties by which he was accompanied, and finally he reached the Pole with only a negro companion and two Eskimos. The long-sought goal was reached on April 1, 1909, without his knowing it.

He had gone on beneath a leaden sky, until suddenly there came a rift in the clouds, and he was able to take an observation from the Sun. *He had marched past the Pole!* The first man to reach the Pole after all the centuries walked past it not knowing.

He turned back and marched east for eight miles, and again he overshot the mark ! To make sure at last he crossed the Pole five times, and then, driving a hole through fissured ice, he let down a lead. The rope went down for about nine thousand feet, and still the bottom was not reached. The North Pole is ice on an abysmal sea.

On one of his trips Admiral Peary took his wife, and there, in the Arctic, hundreds of miles north of civilisation, a little girl was born to them. She opened her eyes on the last day of summer, and then, day and night for the next six months, there was the darkness of the long Arctic night.

Summer returned, and a sunbeam entered the room. The child tried to grasp it, thinking it was a toy ! Then came six months of sunshine, day and night, and little Marie Peary developed, body and mind, her father used to say, as much as she would have done during twelve months in ordinary conditions at home.

HIS LITTLE ONE

Somehow this story from a village on the Yorkshire moors will not leave my mind ; it is here as my friend sent it to me.

FOR a long time I used to watch a young shepherd without knowing anything about him. What first attracted my interest in him was the shepherd's invariable companion, a child just beginning to feel comfortable with his toddling feet.

Sometimes you see this brown-faced child seated on the shoulders of the young shepherd, sometimes he is holding the shepherd's hand and following in the dust of a flock of sheep, with great curly-haired dogs leaping

and barking at his side. The picture is very attractive. For there is nothing picturesque or sentimental about the young shepherd. On the contrary, he is a robust and vigorous figure, with rather a scowl in his eyes, and rarely is a smile on his lips. Yet the child loves him, and apparently the shepherd would not willingly go up to the moors without the companionship of the little one.

Yesterday the shepherd went by, hot, tired, and dusty, with the child on his shoulder. It was in the evening, and he had been far afield in a wild country of hills, so that the weight of the child on his shoulder must have been burdensome.

I asked a neighbour who he was, and the neighbour said: "Ah, that's a tragedy right enough," and told me the man's name. The name made me start, for I had heard the story, but had never connected it with this man. This is the story.

He fought through the war, hating it, always longing to be back in the dale. He came home once, and that made the trenches more terrible than ever. His child was born just before the war ended. He was kept abroad for months after the victory of the Allies. It was torture to him, for he longed to see his child and to greet his young wife, who was dearer to him than the whole world.

But his wife was suddenly taken ill, and the sad letter with the news never reached him.

He came home eagerly and gladly, looking forward with intense delight to being in his home again, and he found that his wife had been dead for some weeks. There was nothing left of his world but the sheep on the moors and a child in the cradle.

AN OLD FRIEND

I think of that old friend in Hungary, old friend of England who loved my papers in the days before the war, and wrote this letter after the long silence of five years. War, war—how foul it is !

THE last years of my life have been very sad. With my sixty-two years I have no hope that I shall be happy again. The middle classes are in a lamentable situation, but the position of the pensioners cannot be described.

During these five years I could not buy a single pocket-handkerchief, and of trousers I dare not dream. We have nothing to eat, no clothes, no coal, no wood. I am sitting in the kitchen to write this, for my room is so cold. If we do get coals I drag them home.

For meals I must go at four o'clock in the morning that I may not be late, for it happens that at ten o'clock they say there is no meal any more ; come tomorrow. This goes on sometimes for a week. What a meal is I really do not know, but gourd I have eaten last summer for months.

I sold my library, and so I have a few crowns to live on for a short time. Now I am working in the Pedagogical Library for 300 crowns a month (worth twelve shillings English money) from morning till evening. The future is very dark. . . .

THE GREAT PHYSICIAN

I think of that splendid man, with his great power of comfort, of whom this tale is true.

THE old schoolmaster and his wife sat side by side not long ago in the consulting-room of a great London physician, waiting for the verdict.

They were very poor, but their doctor in the country

had told them that if they wanted to save their child's life they must take her to see a great physician. He had also said, "I will tell him you cannot afford high fees."

The physician came into the room. "Well," he said, "I have examined your child. She can be saved, but she must have an operation—at once."

The great physician saw the hands of the parents go out to one another and clasp at the side of their chairs; and the father said: "May we be alone together?" The physician withdrew. When he returned he saw they had been crying, and the father asked, with a stammering tongue, what this operation would cost.

"Oh, don't you bother about that!" said the doctor. "She will have the King's surgeon to operate, the King's anaesthetist to give the chloroform, she will go into the best nursing-home in London, and I shall visit her twice a day till she is well enough to go home. Shall we say it will cost nothing at all? Then we shall all be pleased."

The parents were staggered. Was it really true? Of course it was true! But—but— They looked at one another, and whispered together. Then, once more, Might they be alone?

The physician left them again, and on his return the father said: "We think we ought to tell you that our child's godmother left her £300, to be given to her when she comes of age, and we feel that the lawyer would probably allow us to——"

"How dare you!" cried the doctor, pretending to be indignant. "How dare you propose to me anything so wicked as robbing your own child? Don't let me hear another word. The bill is paid and receipted. All that is settled."

The great physician did not tell them he had settled it when he saw their hands go out to one another in their sorrow for their little one.

Then, at last, the old couple gave way in their sorrow and their gratitude ; not their hands but their lips were now together, and tears poured down their cheeks. They took up the doctor's hand, and first the mother kissed it and then the father, and there were tears in the eyes of the great physician.

THE OLD LADY AT THE DOOR

From a little traveller so tired, at a small inn high in the Pyrenees, the postman brings a letter with this story.

I HAVE a friend in the village now, an old, old woman, a wool-spinner. She stood on her threshold, and, interested in her quaint old-fashioned work, I asked :

“ Do you spin all day ? ”

“ Oh, no ! I have quite enough to live on, you see. I do this to help a neighbour.”

“ Then what do you do when you are not spinning ? ”

“ I read most of the time.”

Dear old peasant, living here, three thousand feet high in the Pyrenees, in this old-fashioned village that has not even a fountain, and where we must all draw water from the stream—dear old lady, loving books !

“ And what do you read ? ” I asked.

“ Anything ; the papers and books in my house. Do you like books, mademoiselle ? Shall I lend you some to read ? ”

Then, as if to prove her regard for one who seemed to like books, she told me of her life. She had married very young, and her husband died long ago. She had had eleven children, but only four were left ; and one

is a policeman in Paris ; another married a shopgirl in New York ; a third has a business in the north of France ; the fourth is a teacher far away.

“ So you live all alone ? ” I said.

“ Yes, my dear, except when they come for holidays.”

“ But don't you go to see them ? ”

“ No. It is too much for me. And, besides, travelling frightens me.”

“ Then you have never been away from this village ? ”

“ Never.”

“ And may I ask if you are happy ? ”

“ Thoroughly happy. I know them all in the village, you see, and, having nothing to do for myself, I go about and help ; nursing one, comforting another, telling the children stories. I feel that they are all mine.”

And so this old lady, by giving so much of herself to others, ends by possessing a little of herself—and is not to possess oneself to be conscious of the good of life ?

I asked this old lady, whose children are far out in the world while she has never left her little village and has never even seen a train, what she would do if she were to live her life again. She looked up and smiled as if she had nothing but peace in her heart, and she said :

“ *I would do it all over again—over again exactly.*”

*The splendour of the setting sun falls on the walls ;
the windows open on a sky of fire and gold : we sit
in the fading sunlight and think of lovely things.*

THE LOVELIEST THINGS IN THE WORLD

WHO shall count the noble splendours of the world, the glory Nature gives us all, the beautiful things that men have made, the music that rings from age to age, the pictures that never fade, the loveliness in stone and marble that centuries do not wear away ?

It is good to remember, in the dark hours of the world, that spring and summer have never failed to come, that the tulip and the daffodil have never failed to bloom, that for ever June will bring red roses and lift up the hearts of men.

It is good to think of all the lovely things there are on Earth, of all our noble heritage from ages past ; of the beauty and wonder that lie everywhere about us ; of the glory of the great cathedrals witnessing to the faith that man has never lost in his Creator.

It is good to remember the books and pictures and poems and songs that bring gladness to us all. Let us think of some of them. Are not these things that follow among the loveliest things in the world ?

RUTH AND NAOMI

*The love of a woman and the cleaving of
Ruth to Naomi in the days of their grief.*

RUTH clave unto her, and said : Intreat me not to leave thee, or to return from following after thee, for whither thou goest I will go, and where thou lodgest I will lodge : thy people shall be my people, and thy God my God : where thou diest will I die, and there will I be buried : the Lord do so to me, and more also, if ought but death part thee and me.

LIFE IS SWEET, BROTHER

The enjoyment of simple natural things, and the talk of the gipsies in George Borrow's Lavengro.

"LIFE is sweet, brother."

"Do you think so?"

"Think so! There's night and day, brother, both sweet things; sun, moon, and stars, brother, all sweet things; there's likewise the wind on the heath. Life is very sweet, brother; who would wish to die?"

MY OWN SHALL COME TO ME

The calm faith in our destiny, and this poem of John Burroughs, the naturalist.

SERENE, I fold my hands and wait,
 Nor care for wind, nor tide, nor sea;
 I rave no more 'gainst time or fate,
 For lo! my own shall come to me.
 I stay my haste, I make delays,
 For what avails this eager pace?
 I stand amid the eternal ways,
 And what is mine shall know my face.
 Asleep, awake, by night or day
 The friends I seek are seeking me;
 No wind can drive my bark astray,
 Nor change the tide of destiny.
 What matter if I stand alone?
 I wait with joy the coming years;
 My heart shall reap when it has sown,
 And gather up its fruit of tears.
 The stars come nightly to the sky;
 The tidal wave comes to the sea;
 Nor time, nor space, nor deep, nor high,
 Can keep my own away from me.

THE FRIEND WHO REMEMBERED ULYSSES

The devotion of our dumb companions, and the look on the face of his dog when Ulysses came home.

WHEN Ulysses went out to the great war with Troy he left his young hound behind, the handsome creature

named Argus. They were never parted long; the hound would follow his master like his shadow.

But Ulysses left for the wars before the hound was very old, and he was away more than ten years. Then he came home again, worn with war and aged with time, and there was no one left who knew him. Like a stranger he approached his old home, but, as he drew near to the gate, there lay Argus very near to death, grown old and feeble, weary with the long waiting for his master. He raised his head, and wagged his tail, and looked into the eyes of Ulysses, and knew him.

And then he died, in the hour in which his master came—the one friend who recognised Ulysses.

THE GLADNESS OF THE WORLD

The music of George Eliot's Choir Invisible, and the song of those who believe.

O MAY I join the choir invisible
 Of those immortal dead who live again
 In minds made better by their presence; live
 In pulses stirred to generosity,
 In deeds of daring rectitude, in scorn
 For miserable aims that end with self,
 In thoughts sublime that pierce the night like stars,
 And with their mild persistence urge man's search
 To vaster issues. . . . This is life to come,
 Which martyred men have made more glorious
 For us who strive to follow. May I reach
 That purest heaven, be to other souls
 The cup of strength in some great agony,
 Enkindle generous ardour, feed pure love.
 Beget the smiles that have no cruelty:
 Be the sweet presence of a good diffused,
 And in diffusion ever more intense.
 So shall I join the choir invisible,
 Whose music is the gladness of the world.

SUFFER LITTLE CHILDREN

The rebuke of the Disciples and the blessing of the little children

AND they brought young children to Him, that He should touch them; and His disciples rebuked those

that brought them. But when Jesus saw it He was much displeased, and said unto them :

Suffer the little children to come unto Me, and forbid them not, for of such is the kingdom of God. Verily I say unto you, Whoever shall not receive the kingdom of God as a little child, he shall not enter therein.

And He took them up in His arms, and put His hands upon them, and blessed them.

GOOD-NIGHT TO OLIVER CROMWELL

The love of a mother and the record of a mother's last Goodnight to Oliver Cromwell

THE affection between them was unbounded, and she lived with him in Whitehall, quietly and simply in the splendour of the palace. Always anxious for her son, at the sound of a musket she would be afraid he was shot, and could not be satisfied unless she saw him. She died on November 16, 1654, ninety-four years old, and a little before her death she gave her son this blessing :

The Lord cause His face to shine upon you, and comfort you in all your adversities, and enable you to do great things for the glory of your Most High God, and to be a relief unto His people. My dear son, I leave my heart with thee. A goodnight.

DAVID'S LAMENT FOR JONATHAN

The love of a man for his friend, and the cry of David in the hour of his great sorrow.

THE beauty of Israel is slain upon thy high places : how are the mighty fallen.

Tell it not in Gath, publish it not in the streets of Askelon, lest the daughters of the Philistines rejoice. Ye mountains of Gilboa, let there be no dew, neither let there be rain, upon you, nor fields of offerings.

Saul and Jonathan were lovely and pleasant in their lives, and in their death they were not divided : they were swifter than eagles, they were stronger than lions.

Ye daughters of Israel, weep over Saul, who clothed you in scarlet, with other delights ; who put on ornaments of gold upon your apparel. How are the mighty fallen



A PORTRAIT BY DIOGENE MAILLART



BERNINI'S APOLLO AND DAPHNE IN THE GALLERY BORGHESI IN ROME



THE FISHER BOY BY J. B. CARPEAUX, IN THE LOUVRE



MARCUS AURELIUS



MICHAEL ANGELO'S MADONNA



THE VISIT OF THE ANGEL TO THE VIRGIN, BY LUCA DELLA ROBBIA

in the midst of the battle! O Jonathan, thou wast slain in thine high places. I am distressed for thee, my brother Jonathan: very pleasant hast thou been unto me: thy love to me was wonderful, passing the love of women.

DEAR CHILD OF NATURE

The consolation of Wordsworth to a girl who had been reproached for taking long walks in the country

DEAR child of Nature, let them rail!

There is a nest in a green dale,

A harbour and a hold,

Where thou, a wife and friend, shalt see

Thy own delightful days, and be

A light to young and old.

There, healthy as a shepherd boy,

As if thy heritage were joy,

And pleasure were thy trade,

Thou, while thy babes around thee cling,

Shalt show us how divine a thing

A woman may be made.

Thy thoughts and feelings shall not die,

Nor leave thee, when grey hairs are nigh,

A melancholy slave;

But an old age serene and bright,

And lovely as a Lapland night,

Shall lead thee to thy grave.

CONSIDER THE LILIES

The words of Jesus that we should Consider the Lilies, and be sure we are not less than they.

I SAY unto you, Take no thought for your life, what ye shall eat, or what ye shall drink; nor yet for your body, what ye shall put on. Is not the life more than meat, and the body than raiment?

Behold the fowls of the air: for they sow not, neither do they reap, nor gather into barns; yet your heavenly Father feedeth them. Are ye not much better than they?

And why take ye thought for raiment? Consider

the lilies of the field, how they grow ; they toil not, neither do they spin, and yet I say unto you that even Solomon in all his glory was not arrayed like one of these.

Wherefore, if God so clothe the grass of the field, which today is, and tomorrow is cast into the oven, shall he not much more clothe you, O ye of little faith ?

Therefore take no thought, saying What shall we eat ? or What shall we drink ? or Wherewithal shall we be clothed ? For your heavenly Father knoweth that ye have need of all these things.

But seek ye first the kingdom of God, and His righteousness ; and all these things shall be added unto you.

Fear not, little flock, for it is your Father's good pleasure to give you the Kingdom.

TO A WATERFOWL

*These verses from William Cullen Bryant's
Address to a Water-fowl he watched in its flight*

WHITHER, midst falling dew,

While glow the heavens with the last steps of day,
Far, through their rosy depths, dost thou pursue
Thy solitary way ?

Seek'st thou the splashy brink

Of weedy lake, or marge of river wide,
Or where the rocking billows rise and sink
On the chafed ocean-side ?

All day thy wings have fanned,

At that far height, the cold, thin atmosphere
Yet stoop not, weary, to the welcome land,
Though the dark night is near.

And soon that toil shall end ;

Soon shalt thou find a summer home and rest,
And scream among thy fellows ; reeds shall bend
Soon o'er thy sheltered nest.

Thou'rt gone, the abyss of heaven

Hath swallowed up thy form ; yet on my heart
Deeply hath sunk the lesson thou hast given,
And shall not soon depart.

He who, from zone to zone,
Guides through the boundless sky thy certain flight,
In the long way that I must tread alone
Will lead my steps aright.

THE PASSING-ON OF GEORGE MEREDITH

*Sir J. M. Barrie's description of the passing
of George Meredith and his arrival in Paradise*

HE strode up the hill whirling his staff, for which he had no longer any other use. His hearing was again so acute that from far away on the Dorking road he could hear the rumbling of a coach.

It had been disputed whether he should be buried in Westminster Abbey or in a quiet churchyard, and there came to him somehow a knowledge (it was the last he ever knew of little things) that people had been at variance as to whether a casket of dust should be laid away in one hole or in another, and he flung back his head with the old glorious action, and laughed a laugh "broad as a thousand beeves at pasture."

Box Hill was no longer deserted. When a great man dies—and this was one of the greatest since Shakespeare—the immortals await him at the top of the nearest hill. He looked up and saw his peers. They were all young, like himself. He waved the staff in greeting. One, a mere stripling, "slight unspeakably," R. L. S., detached himself from the others, crying gloriously, "Here's the fellow I have been telling you about!" and ran down the hill to be the first to take his Master's hand. In the meanwhile an empty coach was rolling on to Dorking.

ARTHUR'S FAREWELL TO THE WORLD

*The farewell words of King Arthur as he
enters the barge, set down by Tennyson.*

THE old order changeth, yielding place to new,
And God fulfils Himself in many ways,
Lest one good custom should corrupt the world.
Comfort thyself: what comfort is in me?
I have lived my life, and that which I have done

May He within Himself make pure ! but thou,
 If thou shouldst never see my face again,
 Pray for my soul. More things are wrought by prayer
 Than this world dreams of. Wherefore, let thy voice
 Rise like a fountain for me night and day.
 For what are men better than sheep or goats
 That nourish a blind life within the brain,
 If, knowing God, they lift not hands of prayer
 Both for themselves and those who call them friend ?
 For so the whole round Earth is every way
 Bound by gold chains about the feet of God.

ENGLAND IN HER SORROW

*This tribute by Ralph Waldo Emerson
 to England in the days of sorrow*

I SEE her not dispirited, not weak, but well remembering that she has seen dark days before ; indeed, with a kind of instinct that she sees a little better in a cloudy day, and that in storm of battle and calamity she has a secret vigour and a pulse like a cannon.

I see her in her old age, not decrepit, but young, and still daring to believe in her power of endurance and expansion.

Seeing this, I say, All hail, Mother of Nations, Mother of Heroes, with strength still equal to the time ; still wise to entertain and swift to execute the policy which the mind and heart of mankind require at the present hour, and thus only hospitable to the foreigner, and truly a home to the thoughtful and generous, who are born in the soil.

THE SPIRIT OF ULYSSES

*The noble words of Ulysses setting out on his last
 voyage at the end of his life, as set down by Tennyson.*

DEATH closes all : but something ere the end,
 Some work of noble note, may yet be done,
 Not unbecoming men that strove with gods.
 The lights begin to twinkle from the rocks :
 The long day wanes : the slow moon climbs : the deep
 Moans round with many voices. Come, my friends,
 'Tis not too late to seek a newer world.

Push off, and sitting well in order smite
 The sounding furrows ; for my purpose holds
 To sail beyond the sunset, and the baths
 Of all the western stars, until I die.
 It may be that the gulfs will wash us down ;
 It may be we shall touch the Happy Isles,
 And see the great Achilles, whom we knew.
 Though much is taken, much abides ; and though
 We are not now that strength which in old days
 Moved earth and heaven ; that which we are, we are ;
 One equal temper of heroic hearts,
 Made weak by time and fate, but strong in will
 To strive, to seek, to find, and not to yield.

ROOM FOR THE GLORY OF ALL

These words of a Japanese Ambassador to the United States

THERE have been wars of the Cross and the Crescent,
 the Red Rose and the White, but the Sun and the Stars
 have never quarrelled in their courses.

There is one glory of the Sun and another glory of
 the Moon, and one star differeth from another star in
 glory, but there is room in the ample gulfs of the sky,
 there is room in the spacious purposes of history, for
 the glory of all.

THE TWENTY-THIRD PSALM

The perfect song of faith and simple trust in God

THE Lord is my shepherd ; I shall not want.

He maketh me to lie down in green pastures : he
 leadeth me beside the still waters.

He restoreth my soul : He leadeth me in the paths
 of righteousness for His name's sake.

Yea, though I walk through the valley of the shadow
 of death, I will fear no evil : for Thou art with me ;
 Thy rod and Thy staff they comfort me.

Thou preparest a table before me in the presence of
 mine enemies. Thou anointest my head with oil ; my
 cup runneth over.

Surely goodness and mercy shall follow me all the
 days of my life, and I will dwell in the House of the
 Lord for ever.

THERE CAME A GREAT STRONG WIND

This passage from the life of Elijah

A GREAT and strong wind rent the mountains ;
 But the Lord was not in the wind.
 And after the wind an earthquake ;
 But the Lord was not in the earthquake.
 And after the earthquake a fire ;
 But the Lord was not in the fire.
 And after the fire a still, small voice. . . . And it was so.

LET SOMETHING GOOD BE SAID

This prayer for those who fall, written by James Whitcomb Riley.

WHEN over the fair fame of friend or foe
 The shadow of disgrace shall fall ; instead
 Of words of blame, or proof of thus and so,
 Let something good be said.

Forget not that no fellow-being yet
 May fall so low but love may lift his head ;
 Even the cheek of shame with tears is wet
 If something good be said.

No generous heart may vainly turn aside
 In ways of sympathy ; no soul so dead
 But may awaken strong and glorified
 If something good be said.

And so I charge ye, by the thorny crown,
 And by the Cross on which the Saviour bled,
 And by your own soul's hope of fair renown,
 Let something good be said !

THREE THINGS

This note from the diary of Philip Henry, written in 1674.

THERE are three things which I would not have for
 the world against me : My own conscience ; the Word
 of God ; the prayers of good people.

FOR EVER ENGLAND

*These words of Rupert Brooke before
 he fell in a foreign field, loving England*

IF I should die, think only this of me :
 That there's some corner in a foreign field
 That is for ever England.

SO BE MY PASSING

*The wish of William Ernest Henley that
he might pass from the Earth singing*

So be my passing !

My task accomplished and the long day done,

My wages taken, and in my heart

Some late lark singing.

HE HAS OUTSOARED THE SHADOW OF OUR NIGHT

This verse from Shelley's lament for his friend John Keats

HE has outsoared the shadow of our night ;

Envy and calumny and hate and pain,

And that unrest which men miscall delight,

Can touch him not and torture not again ;

From the contagion of the world's slow stain

He is secure, and now can never mourn

A heart grown cold, a head grown gray in vain ;

Nor, when the spirit's self has ceased to burn,

With sparkless ashes load an unlamented urn.

IT FORTIFIES MY SOUL

*This verse of Arthur Hugh Clough on the strength
that comes from the faith that God will never fail us*

IT fortifies my soul to know

That, though I perish Truth is so :

That, howsoe'er I stray and range,

Whate'er I do, Thou dost not change.

I steadier step when I recall

That, if I slip, Thou dost not fall.

TO A TIRED FIGHTER

*These words of Matthew Arnold to a fighter who
will not turn his back though the cause be lost*

CREEP into thy narrow bed,

Creep, and let no more be said !

Vain thy onset ! all stands fast.

Thou thyself must break at last.

Let the long contention cease !

Geese are swans, and swans are geese.

Let them have it how they will !

Thou art tired ; best be still.

They out-talked thee, hissed thee, tore thee ?
 Better men fared thus before thee :
 Fired their ringing shot and passed,
 Hotly charged—and sank at last.

Charge once more, then, and be dumb !
 Let the victors, when they come,
 When the forts of folly fall,
 Find thy body by the wall !

THREE HILLS

The exquisite poem of three hills in England and Flanders and Jerusalem, written on a hill at Harrow by Everard Owen in 1915

THERE is a hill in England,
 Green fields and a school I know,
 Where the balls fly fast in summer,
 And the whispering elm trees grow,
 A little hill, a dear hill,
 And the playing fields below.

There is a hill in Flanders
 Heaped with a thousand slain,
 Where the shells fly night and noontide
 And the ghosts that died in vain—
 A little hill, a hard hill
 To the souls that died in pain.

There is a hill in Jewry,
 Three crosses pierce the sky,
 On the midmost He is dying
 To save all those who die—
 A little hill, a kind hill
 To souls in jeopardy.

BE READY

*The spirit of patience and courage in
 these four lines by Edwin Markham*

FOR all your days prepare,
 And meet them ever alike ;
 When you are the anvil, bear ;
 When you are the hammer, strike.



PERUGINO'S ARCHANGEL GABRIEL IN THE ACADEMY AT FLORENCE



The Man of Sorrows,
by Leonardo da Vinci



A Portrait by Holbein



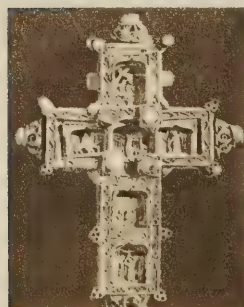
Gainsborough's Queen Charlotte



Panels of Pisa Cathedral Door, 700 years old



An 800-years-old Cover of the Bible



A sixth-century Cross
in the Vatican



Raphael's Madonna, in the Uffizi Gallery,
Florence



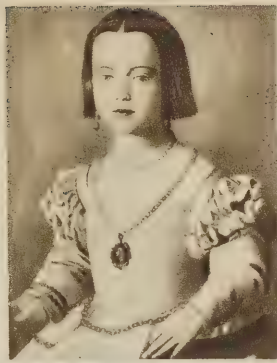
A Pastoral Staff of the
fifteenth century



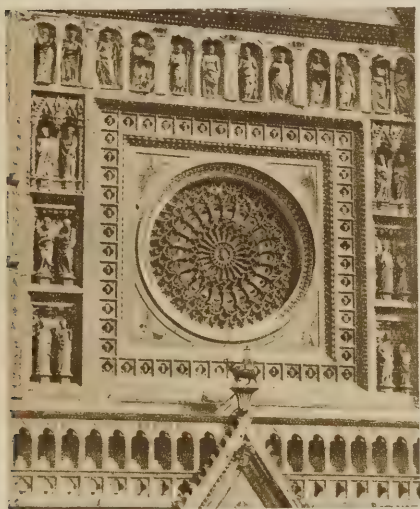
Madame le Brun's Boy in Red



A Fisher Boy in Florence



Bronzino's Maria Medici



The Cathedral Front at Orvieto



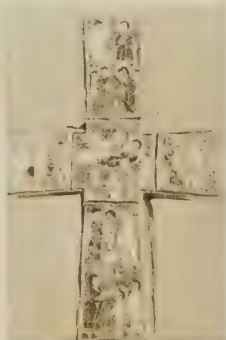
A little room in the Vecchio Palace



A Perfume Bowl in the
Pitti Palace



Gérôme's Napoleon on Horseback
at the Luxembourg



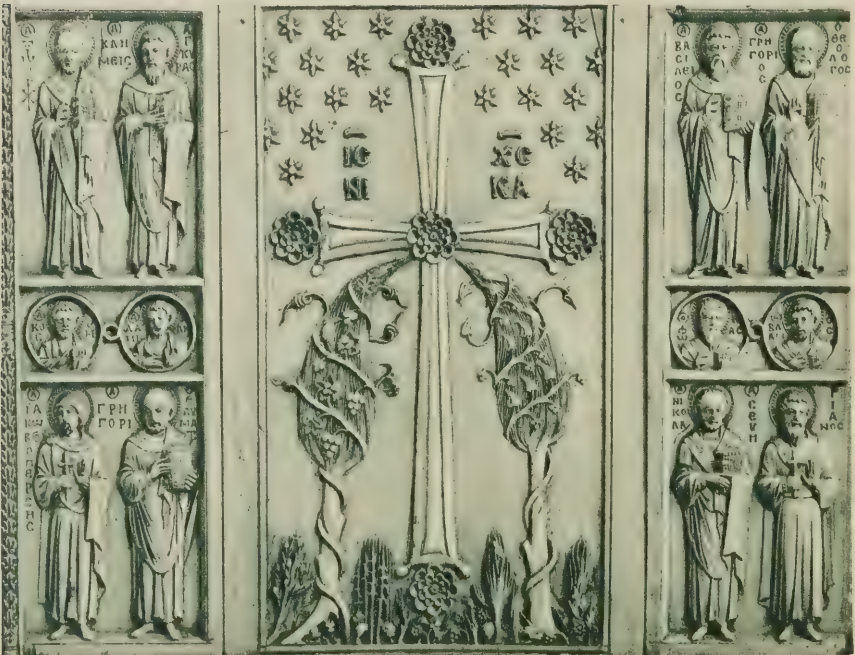
A Cross in the Vatican
1200 years old



A LITTLE HORSEMAN OF THE
FOURTEENTH CENTURY



PAUL MANSHIP'S BRONZE STATUE
OF DIANA



AN IVORY OF THE TENTH CENTURY IN THE LOUVRE

THERE WAS A KNIGHT OF BETHLEHEM

Henry Neville Maughan's beautiful picture of the Carpenter

THERE was a knight of Bethlehem whose wealth was tears
and sorrows ;
His men-at-arms were little lambs, His trumpeters were
sparrows ;
His castle was a wooden cross, whereon He hung so high ;
His helmet was a crown of thorns, whose crest did touch
the sky.

SHE IS A RICH AND RARE LAND

*The love of a poet for his homeland,
as here expressed by Thomas Davis.*

SHE is a rich and rare land ;
O ! she's a fresh and fair land ;
She is a dear and rare land—
This native land of mine.

No men than hers are braver,
Her women's hearts ne'er waver ;
I'd freely die to save her
And think my lot divine.

OH, FOR A BOOKE

These lines on the love of a book by a writer unknown

OH, for a booke and a shadie nooke,
Eyther in-a-dorre or out ;
With the grene leaves whisp'ring overhede,
Or the streete cryes all about.
Where I maie reade all at my ease,
Both of the newe and olde ;
For a jollie goode booke whereon to looke
Is better to me than golde.

A LAST WORD TO A FRIEND

*These last words on Joseph Rodman Drake, written a
hundred years ago by his friend Fitzgreene Halleck*

GREEN be the turf above thee,
Friend of my better days ;
None knew thee but to love thee,
None named thee but to praise.

FOR EVER AND FOR EVER

*The farewell of Lord Tennyson to a
river by which he would not come again*

Flow down, cold rivulet, to the sea,
Thy tribute wave deliver :
No more by thee my steps shall be,
For ever and for ever.

Flow, swiftly flow, by lawn and lea,
A rivulet, then a river :
Nowhere by thee my steps shall be,
For ever and for ever.

But here will sigh thine alder-tree,
And here thine aspen shiver ;
And here by thee will hum the bee,
For ever and for ever.

A thousand suns will stream on thee,
A thousand moons will quiver ;
But not by thee my steps shall be,
For ever and for ever.

GOD BE IN MY HEAD

*The child's prayer that the old walls of Salis-
bury Cathedral have heard for hundreds of years*

God be in my head
And in my understanding ;

God be in my eyes
And in my looking ;

God be in my mouth,
And in my speaking ;

God be in my heart,
And in my thinking ;

God be at mine end,
And at my departing.

WHEN THE YEARS HAVE DIED AWAY

*Lord Tennyson's Poet's Song, with the magic
of the world when the years have died away.*

THE rain had fallen, the poet arose,
He passed by the town and out of the street,
A light wind blew from the gates of the sun,
And waves of shadow went over the wheat,
And he sat him down in a lonely place,
And chanted a melody loud and sweet
That made the wild swan pause in her cloud
And the lark drop down at his feet.
The swallow stopped as he hunted the fly,
The snake slipped under a spray ;
The wild hawk stood with his down on his beak,
And stared, with his foot on the prey ;
And the nightingale thought, " I have sung
many songs,
But never a one so gay,
For he sings of what the world will be
When the years have died away."

LEAD, KINDLY LIGHT

The evening hymn of all our race, by Cardinal Newman.

LEAD, Kindly Light, amid the encircling gloom,
Lead Thou me on ;
The night is dark, and I am far from home,
Lead Thou me on.
Keep Thou my feet ; I do not ask to see
The distant scene ; one step enough for me.
I was not ever thus, nor prayed that Thou
Should'st lead me on ;
I loved to choose and see my path ; but now
Lead Thou me on.
I loved the garish day, and spite of fears
Pride ruled my will ; remember not past years.
So long Thy power hath blest me, sure it still
Will lead me on,
O'er moor and fen, o'er crag and torrent, till
The night is gone ;
And with the morn those angel faces smile
Which I have loved long since and lost awhile.

HE

*These lines by Charlotte Becker, of
an unknown man who lived and died*

SAY not, because he did no wondrous deed,
Amassed no worldly gain,
Wrote no great book, revealed no hidden truth,
Perchance he lived in vain.

For there was grief within a thousand hearts
The hour he ceased to live ;
He held the love of women and of men :
Life has no more to give !

EVERY WISE CHILD

*These twenty-eight lines that Harold Begbie posted
to me one morning for the Children's Encyclopedia*

IF I want to be happy
And quick on my toes,
I must bite my food slowly
And breathe through my nose.

I must press back my shoulders,
And hold up my head,
And *not* close my window
When going to bed.

I must soap my bath-flannel,
And scrub all I know ;
I must then take a towel
And rub till I glow.

I must never be idle,
And loll in my chair ;
Or shout like a demon,
And act like a bear.

I must play and not fidget,
Read books and not flop !
Begin all with a purpose,
And know when to stop.

I must love what is noble,
And do what is kind ;
I must strengthen my body
And tidy my mind.

Yes, if I would be healthy,
And free from all cares,
I must do all I've told you,
And *mean* all my prayers.

SO LIVE THAT WHEN THY SUMMONS COMES

The last lines of Thanatopsis, by William Cullen Bryant.

So live, that when thy summons comes to join
The innumerable caravan which moves
To that mysterious realm where each shall take
His chamber in the silent halls of death,
Thou go not like the quarry-slave at night,
Scourged to his dungeon ; but, sustained and soothed
By an unfaltering trust, approach thy grave
Like one who wraps the drapery of his couch
About him, and lies down to pleasant dreams.

FOR THOSE WHO BRAVE THE STORM

*This word of God-speed for those who brave
the storm, written by Agnes Repplier.*

A SHIPWRECKED sailor, buried on this coast,
Bids you set sail.
Full many a gallant bark, when he was lost,
Weathered the gale.

THE LAMENT OF JESUS FOR JERUSALEM

*The cry of Jesus on the hill above Jerusa-
lem, when the city refused to receive Him.*

O JERUSALEM, Jerusalem, thou that killest the prophets and stonest them which are sent unto thee, how often would I have gathered thy children together, even as a hen gathereth her chickens under her wings, and ye would not !

BLESSED ARE THEY

The words of Jesus spoken on the mountain

BLESSED are the poor in spirit, for their's is the kingdom of heaven.

Blessed are they that mourn, for they shall be comforted.

Blessed are the meek, for they shall inherit the Earth.

Blessed are they which do hunger and thirst after righteousness, for they shall be filled.

Blessed are the merciful, for they shall obtain mercy.
Blessed are the pure in heart, for they shall see God.

Blessed are the peacemakers, for they shall be called the children of God.

Blessed are they which are persecuted for righteousness' sake, for their's is the kingdom of heaven.

A GOOD MAN'S NAME

The farewell words to Parliament of Sir Robert Peel, in the hour of his fall from power.

It may be that I shall leave a name sometimes remembered with expressions of goodwill in the abodes of those whose lot it is to labour and to earn their daily bread by the sweat of their brow, when they shall recruit their strength with abundant and untaxed food, the sweeter because it is no longer leavened by a sense of injustice.

TOO DEEP FOR TEARS

The last words of Wordsworth's Ode to Immortality

THANKS to the human heart by which we live,
Thanks to its tenderness, its joys, and fears,
To me the meanest flower that blows can give
Thoughts that do often lie too deep for tears.

NOW THE LABOURER'S TASK IS O'ER

*These words with which we leave to God
the friend who is no more of this world*

Now the labourer's task is o'er,

Now the battle day is past,

Now upon the farther shore

Lands the voyager at last :

Father, in Thy gracious keeping,

Leave we now Thy servant sleeping.

And are not the following sayings, taken from poems and books and papers by many writers, among the loveliest things in the world ?

WHAT I LIVE FOR

I LIVE for those who love me,
For those who know me true,

For the heaven that smiles above me,
And awaits my spirit, too ;
For the cause that lacks assistance,
For the wrong that needs resistance,
For the future in the distance,
And the good that I can do.

George Linnaeus Banks

EXCEEDING ALL

LONG life's a lovely thing to know,
With lovely health and wealth, forsooth,
And lovely name and fame. But O
The loveliness of Youth ! *James Whitcomb Riley*

CLOSE THINE EYES AND SLEEP SECURE

CLOSE thine eyes and sleep secure,
Thy soul is safe, thy body sure ;
He that guards thee, He that keeps,
Never slumbers, never sleeps.

Attributed to Charles Stuart

GOD'S FLOWERS

WHEN wilt thou save the people ?
O God of mercy, when ?
Not kings and lords, but nations,
Not thrones and crowns, but men.
Flowers of Thy heart, O God, are they,
Let them not pass like weeds away
Their heritage a sunless day ;
God save the people. *Ebenezer Elliott*

OLIVET AND GALILEE

WE may not climb the heavenly steeps
To bring the Lord Christ down :
In vain we search the lowest deeps,
For him no depths can drown.
But warm, sweet, tender, even yet
A present help is He ;
And faith has still its Olivet,
And love its Galilee. *John Greenleaf Whittier*

LET your trouble be,
 Light will follow dark,
 Though the heaven falls,
 You may hear the lark. *Goethe*

LEST WE FORGET
 God of our fathers, known of old,
 Lord of our far-flung battle-line,
 Beneath whose awful hand we hold
 Dominion over palm and pine—
 Lord God of Hosts, be with us yet,
 Lest we forget—lest we forget. *Rudyard Kipling*

WHATSOEVER THINGS ARE TRUE
 WHATSOEVER things are true, whatsoever things are
 honest, whatsoever things are just, whatsoever things are
 pure, whatsoever things are lovely, whatsoever things
 are of good report: if there be any virtue, and if there
 be any praise, think of these things. *Letters of Paul*

THE EVERLASTING ARMS
 THE Eternal God is thy Refuge, and underneath are
 the Everlasting Arms. *The Psalmist*

COME UNTO ME
 COME unto me, all ye that labour and are heavy laden,
 and I will give you rest. *Jesus*

GENTLE JESUS, MEEK AND MILD
 GENTLE Jesus, meek and mild,
 Look upon this little child;
 Pity my simplicity,
 Suffer me to come to Thee.
 Fain I would to Thee be brought,
 Gracious God, forbid it not;
 In the kingdom of Thy grace
 Grant Thy little child a place. *Charles Wesley*

GOD has given us our memories that we might have
 roses in December. By a writer unknown



THE ANCIENT STATUE OF ANTINOUS IN NAPLES MUSEUM



LORENZO MEDICI ON HIS WHITE HORSE, IN THE RICCARDI PALACE FLORENCE



PIETRO LORENZETTI'S MADONNA ON THE WALLS OF THE CHURCH AT ASSISI



VELASQUEZ'S FERDINAND OF AUSTRIA



EDWIN ABBEY'S PICTURE OF CORDELIA



AN OLD LADY SLEEPS—FROM THE CHURCH OF ST. CROCE IN FLORENCE



Seagulls, by Albert Moore



The Light of the World
By Clement Skilbeck



Sea Shells, by Albert Moore



THE MANGER AT BETHLEHEM, BY DELLA ROBBIA

NIGHT

*The lady in her curtained bed,
The herdsman in his wattled shed,
The clansmen in the heathered hall,
Sweet sleep be with you, one and all.*

Joanna Baillie

*So little done, so little done,
And soon comes setting of the sun.
So little said, so little said,
And blue skies deepening to red.
So short a time to backward gaze :
The sky is filled with purple haze.
So short a time to look afar :
The veil has fallen from a star.
Farewell, brief day, adown the dark
Float dewy memories, and hark !
To you and me fair angels call
Beyond the moonlit, dreamland wall ;
And thou with Time and I with sleep
A happy, holy tryst shall keep.*

Harry Fowler

*The long day wanes,
The slow moon climbs.*

EARTH'S ONLY CHILD

THE mind can hardly conceive that life has ever been upon the Moon, but as we look at this silent world, see with our own eyes the mighty record of its past, we feel a consciousness within us of the boundless mystery of the universe. We stand on a world of life and look on a world of death. Not a flower blooms, not a tree grows, not an insect creeps. Not a sound is heard, not a thing is moving; the silence of a thousand ages is unbroken in this solitude that no man knows.

But it was not always thus. The energies let loose in the Great War were like children's toys compared with the explosive forces that must once have rent and torn the Moon. Forces incalculable and unthinkable have made her what she is—beautiful to look upon as she rides with the Earth around the Sun, but with a face all scarred and worn with time, and the mark of some great agony written over it. Again and again I think of a note Professor J. A. Thomson sent to me one day from Aberdeen. We may say of the Moon, he said, that it was Earth's only child, and that it died. I can never forget now that the Earth has lost its only child.

And what a death the Moon must have died ! We shall never know for certain, but it is thought that it wrenched itself away from the Earth, that the Earth was once shaped like a pear, and that, as it spun round, the small end of the pear broke off and spun round independently, and for ages and ages went round the Sun side by side with the Earth, but slowly getting farther away, until at last it is where it is.

You cannot imagine the Moon breaking off the Earth. The mind reels to think of it. But it is all very likely. Millions of years ago, when the Earth was cooling down from its molten state and a crust about thirty miles thick was formed, there was probably a day when five thousand million cubic miles of matter broke away, and it is possible that the gap it left is now the bed of the Pacific Ocean. That is how most men think the Moon began.

The breaking away of the Moon slowed down the Earth, for the Moon was pulling it all the time. The Moon revolved faster and faster, and wandered far away, but time has kept these two worlds together. The pull of the Earth on the Moon and the pull of the Moon on the Earth have never failed, and today they travel together and revolve together, so that the other side of the Moon has never yet been seen by anyone on Earth.

But we know, from the face that we see, that the Moon has had an amazing history since she left the Earth. The Sun pours down on it unceasingly through a day of three hundred hours. No life like ours could exist in the heat that reaches there, but on the other side the Moon is as cold as ice, and no life like ours could endure a cold like that. A man living on the Moon would spend his day in the tropics and his night in the Arctic. He would have to endure such heat and cold alternately as human beings have never known.

No atmosphere envelops the Moon, and the fierce heat of the Sun pours down on it unchecked. There is no blanket to break its heat, no ocean of air to diminish its intensity or soften its dazzling light, and as there is no atmosphere there is no sky-light, so that the Sun shines on the Moon from a dense black sky. It would look like a great white ball shining in pitch-black night.

When the Sun withdraws its light and the Moon is wrapped in night, the darkness there must be as in the darkness of a pit. A day and a night on the Moon are equal to a month on Earth, so that for fourteen of our days a man on the Moon would live in light and heat unknown to us, and for fourteen days more in blackness and cold such as Earth never knows.

We can hardly think of a world like that as anything but dead, and if the Moon was born when the Earth was born we may ask why it has died so soon. Why is Earth still covered with green trees, and carpeted with flowers, and throbbing with the life of a myriad myriad living things, while the Moon is dead and bare? It is because the Moon is smaller; the stupendous energies that spent themselves in the lunar world have been exhausted, and life, if ever life was there, has run its course.

Four sorts of worlds we know.

We know the nebula of Andromeda, a mighty mass of gas moving about the universe as the Earth once moved about.

We know the planet Jupiter, once like the nebula of Andromeda, but now condensed into a liquid mass like a world of boiling metal, as the Earth once was.

We know the Earth itself, with its core still hot, but its surface fitted for life and enveloped in an atmosphere that makes life possible.

And we know the Moon, an extinct and barren world, a world of death, as the Earth may one day be.

Through these four stages every world must pass; the Earth is in the third and the Moon is in the fourth. All life and water and air have passed away, all sound has gone. No speech is possible; the Man on the Moon, if there were one, would be deaf and dumb, for sound depends

on air, and air the Moon has none—or, if there should be any at all, it must be twice as thin as what we call a vacuum.

Weird and strange indeed are the scenes on this dead world, and it is one of the triumphs of the human mind that we know them well. Long before we knew the North Pole of the Earth men knew the North Pole of the Moon. Men find their way about the Moon more easily than about the interior of Australia or parts of Africa. It was the first thing man began to study in the heavens. If it filled men with dread in ancient times, it gave them their first ideas of anything beyond this world and their first glimmering of the outer universe. The shepherds of Chaldea would sit and look at it, and think it a sort of mirror in which the image of the Earth reflected back, and after Calvary men thought they saw the figure of Judas in the Moon, suffering transportation for his treason to mankind. Long after that wise men, looking at the Moon through telescopes, imagined that the marks they saw were made by men, as some men think today of the marks on Mars. Old Kepler used to think that these huge crater-walls on the Moon were built by men; they looked to him like the walls of pits built as shelters from the long, fierce action of the Sun. But Kepler did not know the nature of the things he saw—their vastness and their age. Let us look at the craters as he never saw them. A boy and girl today can see what Kepler and Galileo would have given their lives to see. We can see the Moon through a telescope that brings it as near as Mont Blanc seen from Lyons. There are telescopes that bring it within forty miles, and, as there is no atmosphere hiding the moon, the forty miles may be sometimes as thirty miles, or even less.

Is there anything more enthralling than a walk about the Moon? It is not a mere fancy, for we can see the way to go. We can fancy ourselves climbing up steep cliffs, and running through valleys, and roaming over hills. We can name the very places, we can find them on the map, we can watch the sunrise and the sunset, we can see the shadows stealing over mountain peaks and trace them like church steeples for miles and miles and miles. We know how big they are, how steep they are, how deep they are. It is all like a miracle when we think what it means, for a thing on the Moon must be thirty miles wide to be seen as a pin-point with the naked eye on Earth; but the telescope *is* a miracle. It gives a man new eyes, eyes that take him to another world, so that many a man lives now who has travelled in imagination on the hills and valleys of the Moon more widely than upon the Earth. Men know the Alps of the Moon who have never seen the Alps on Earth, and many a man has seen a crater there who has never seen one here.

It is these craters that seize the imagination. They are the handwriting on the Moon. They are gigantic beyond anything seen on Earth, and the forces that made them are beyond our understanding. There are hundreds of them, and from some of them vast quantities of matter have been flung for over twenty miles. Their walls rise up miles high, and some of them are so wide that two men standing on each side would be as far apart as if one were in Canterbury Cathedral and the other in St. Paul's. The walls rise sheer like walls of houses, but they fall away outside, and for a hundred miles at times we can trace the vast extent of those tremendous forces which flung up burning lava and molten streams from the furnace of the Moon. There is no doubt these craters are

the remnants of volcanoes, but to what can we compare the cataclysms which tore the heart of the Moon to pieces and left it yawning with chasms and stricken with death?

The Earth can hardly have known explosions to equal these. The Moon is thirteen times smaller than the Earth, and parted with its heat more quickly, and gravity there has only one-sixth of its force on Earth. Explosive forces on the Moon, therefore, would be six times as effective as on Earth. Everything on the Moon is very much lighter—a brick that weighs six pounds here would weigh one pound there; a man who can jump six feet here would jump thirty-six feet there; a gun that fires ten miles here would fire sixty miles there.

We can imagine, therefore, that those internal forces that seem almost to have torn the surface of the Moon to bits must have been beyond all human experience or conception; in parts the surface of the Moon is thick with craters, and rising from the floor of the craters we find enormous cones, standing like obelisks, sometimes a mile high, and sometimes with another crater in the cone, formed, no doubt, by the last expiring efforts of the eruption that built up the great circular walls. Some craters have cracks across that are quite a mile wide, and one great crater, over fifty miles across, is filled to the brim with lava, as if it had oozed out, after the walls had been formed, until it filled the huge round pit with a mass of solid rock. It is believed that sometimes, in these explosions on the Moon, a single eruption may have sent forth, crashing out of the red-hot depths, a thousand cubic miles of matter. We read of a regiment of soldiers encamping in the crater of Vesuvius in the days before the destruction of Pompeii, but the whole of an English county could be contained in a crater of the Moon, and



THE WHITE LADY OF THE HEAVENS—THE CRESCENT MOON Photographed by Mr. Philip E. Belas



THE ASTOUNDING CRATERS ON THE FACE OF THE MOON, SOME OF THEM AS FAR ACROSS
AS FROM LONDON TO BRIGHTON

there are gaps across the surface which are sometimes a mile wide and a hundred and fifty miles long, and deeper than from the top of our highest mountain to the bottom of our deepest sea.

And as chasms are deeper and craters are wider, so mountains are higher on the Moon. A grain of mustard seed on a globe three feet across would represent the highest mountain on the Earth, but a grain of seed on a globe one foot wide would stand for the highest mountain on the Moon. Cliffs on the Moon are much steeper than on Earth, and the mountain scenery, if we could see it as we see our Alps, would be far grander than our own. One mountain chain has three thousand mountains packed together. The range we call the Alps has seven hundred glorious peaks, and an immense valley eighty miles long and five miles wide that seems to have been cut with a knife. Astronomers watch the sun rise on these peaks as travellers watch it rise in Switzerland, and the Apennine chain, reaching out four hundred and fifty miles, ends in a precipitous face which at sunrise throws a shadow over the plain for over eighty miles.

But more amazing than these mighty shadows are those white pathways that seem to creep wherever we look in the Moon. From one great crater we can trace them for a thousand miles. One is said to be seventeen hundred miles long, and they are sometimes twenty-five miles wide. They go over mountains and plains, over craters and through valleys, straight on everywhere, marching like the lemmings in those vast migrations which lead them in a straight line to the sea. Somebody has said that if a brush had been drawn across the face of the Moon in a thousand directions the effect would be to give us these white streaks, and they are among the

mysteries of the lunar world. They are probably outflowings of lava through the great cracks around volcanoes, but the mind of astronomers is as much puzzled by them as by those enormous areas on the Moon which look like seas. They are not seas, for there is no water on the Moon. But perhaps these smooth surfaces—though what seems to us as smooth as water is actually broken in ridges and cracks extending for miles—may be due to the falling of the thin crust into the molten bed below, so that what we see may be the surface of a molten lake turned solid.

Such a world of stillness and mystery and death is this vast and shining solitude of the Moon. We have called it Earth's dead child, but we know that nothing can die and cease to be, and Earth's dead child has its glorious immortality.

If the Moon is dead it keeps life sweet on Earth. Perhaps you have not thought of it, but, as the Sun keeps our atmosphere in constant circulation through the winds, so the Moon does with the waters. It saves us from pestilence. It is the greatest sanitary agent that any man knows. The power of gravitation runs from Moon to Earth and Earth to Moon, and the pull of the Moon on the sea brings the tides up twice a day. They cleanse the seashore as nothing else could, and carry off the deposits of rivers which otherwise would bring us plague and pestilence.

For a thousand years and more the Moon has been a clock to men on Earth. Drake and Columbus and Nelson floundering in their little boats—how they must have blessed the Moon, and how men bless it still at sea, for there is no clock ever made so perfect for navigators, so necessary for Mauretanas and Majestics, as the Moon.

But the long, strange story of the past tells of a stranger service still that Earth owes to the Moon, for, as far as we can know, the whole of human history would have been changed, and every individual life upon the Earth would have been changed, but for the Moon. The greatest influence it has had upon the Earth in its millions of years has been to slow Earth down, so that a day on the Earth, which used to be four or five hours, has now become twenty-four. What life would have been with four or five hours of light and four or five hours of dark, we can hardly think—nor can we think what life will be on Earth when the Moon has slowed us down still more, so that our day becomes as long as a month, and one side of the Earth will be for a month in sunlight while the other side has a month of dark and cold. It is all bound to happen.

But we may lift up our hearts ; it will not hurt us. There are good times coming long before the Moon has slowed us down to that extent, and who shall say that the Moon may not have a service still to render to the Earth beyond all our imaginings ? She may help us with our labour ; she may release our men from toil. Not so very long ago the traffic of our rivers lay at the mercy of the Moon. Our ships sailed up our rivers with the tides, and in the great race between the wind and tide the tide would always win. Who will write a book to prove that the Moon put our great cities where they are ? It is probably true, for had there been no Moon there would have been no tides, and had there been no tides who would have built London where it is ?

But let us keep to our text, and think of that little boy who, though he knew it not, set out to fight the Moon and win the fight. He was young James Watt, whose

aunt would scold him gently for sitting wasting his time watching the steam puff out of the kettle-lid. "You lazy boy, James Watt!" she would say. "Have you nothing better to do than to sit for hours looking at that kettle?" But little James Watt was fighting the Moon, and he was winning. He brought steam power into the modern world, and Richard Trevithick and George Stephenson and William Symington, and all the rest of those great pioneers, were fighters of the Moon, although they knew it not.

For steam power made our ships independent of the tide and more powerful than the wind, and no more did we need the Moon to drive our shipping for us, no longer need our sailors await the Moon's convenience.

Well, we have won our independence of the Moon, and now we have to harness her. Millions of tons of water are lifted twice a day for many feet, and we let this mighty power run to waste. It would do the work of half the nation if we made it turn a wheel.

Even our fathers used the power of the tides. A hundred years ago at London Bridge these rising waters as the tide came in, the rushing river as the tide went out, were made to work the pumps that carried water to London people; it was one of the good things of the past that we stopped instead of building up. The time will come when we shall build it up again, and then all men who toil will bless the Moon, for it will be the slave of Earth chained to our factories, turning our wheels, driving our machines. It will all come if we will be patient. Time and tide are with us.

Out of the depths of the darkness comes the red planet of Mars, like a question waiting for eternity to answer. In this wondrous universe is Man alone? Are all these boundless realms of space for him? Is man, who kills his brother still as Cain did long ago, the crown of all this evolution of a million years?

ARE WE ALONE IN THE UNIVERSE?

IT is an enthralling thought, but let us say at once that we do not know. Then let us say that we can hardly believe it. The unthinkable wonder of this world is that it is all as a grain of sand or a pinch of dust in the vastness of the universe.

The mind of a man has penetrated into the marvellous depths of invisible things and reached out into boundless space; but the mind of man is baffled as it contemplates the universe it inhabits. It is beyond the measure of our laws, beyond the meaning of our words; it is outside the range of all our understanding.

There are things so far away from us that all human history would not be long enough for the fastest thing we know to reach them. There are things so vast that the Earth itself is a speck compared with them. There is wonder piled on wonder, and it grows with everything we learn about it.

There are eternal fires so great that they would shrivel up the Earth as a leaf. There are worlds that are like white-hot cauldrons, hundreds of times as big as the Earth. Incredible and illimitable and inexhaustible is this whirling pageant of worlds being made, worlds in being, worlds in the stillness of death; and it moves to order. Nothing anywhere about it is haphazard: nothing, as far as the human mind can fathom, is here by chance or out of place. The great procession of the

worlds moves on by some great law to some great end ; and we who sit here reading this are part of it—about as big a part of the whole of it as an egg in a robin's nest is of all the eggs there are in the world.

And are we alone in this boundless universe ? A man has died in our time who said that we are not. He was James Russell Lowell's son Percival, and he spent his life on the great heights of Arizona studying Mars. He looked out into the heavens and saw the Sun and Moon and stars ; he saw the planets passing by ; and he thought he saw the hand of man in the heavens.

We have all been thrilled by the footprints in the sand that Robinson Crusoe found. He was not alone on the island, then ? But what a thrill there comes to us as we think, not of a footprint in the sand, but of a finger-print in the sky ! We are not alone in the universe, then ? The mind in which a thought like that has found its way can never be quite dull. The most dramatic achievements of man pale in interest beside the thought that perhaps we are not alone in these boundless realms of God.

It is not only that there is something almost beyond words in the thought that a speck of light in the sky may be the home of multitudes of human beings, the scene of life for myriads of creatures not less powerful than ourselves. It is not merely the thought that on this speck of light there may be continents teeming with natural wonder and packed with products of life and mind, and what we call on Earth our civilisation. That in itself is something for the mind to wonder at ; but these wise men on Earth who hitch their waggons to the stars, and study worlds as others study maps or molehills—are not much moved by the thought of a speck of light with

all this wonder and glory in it, for they know that if we stood on another world, and could look across space to Earth, this round globe and all that it contains would be a speck and nothing more, a speck of light like any star we see tonight, or perhaps so small that it would be invisible.

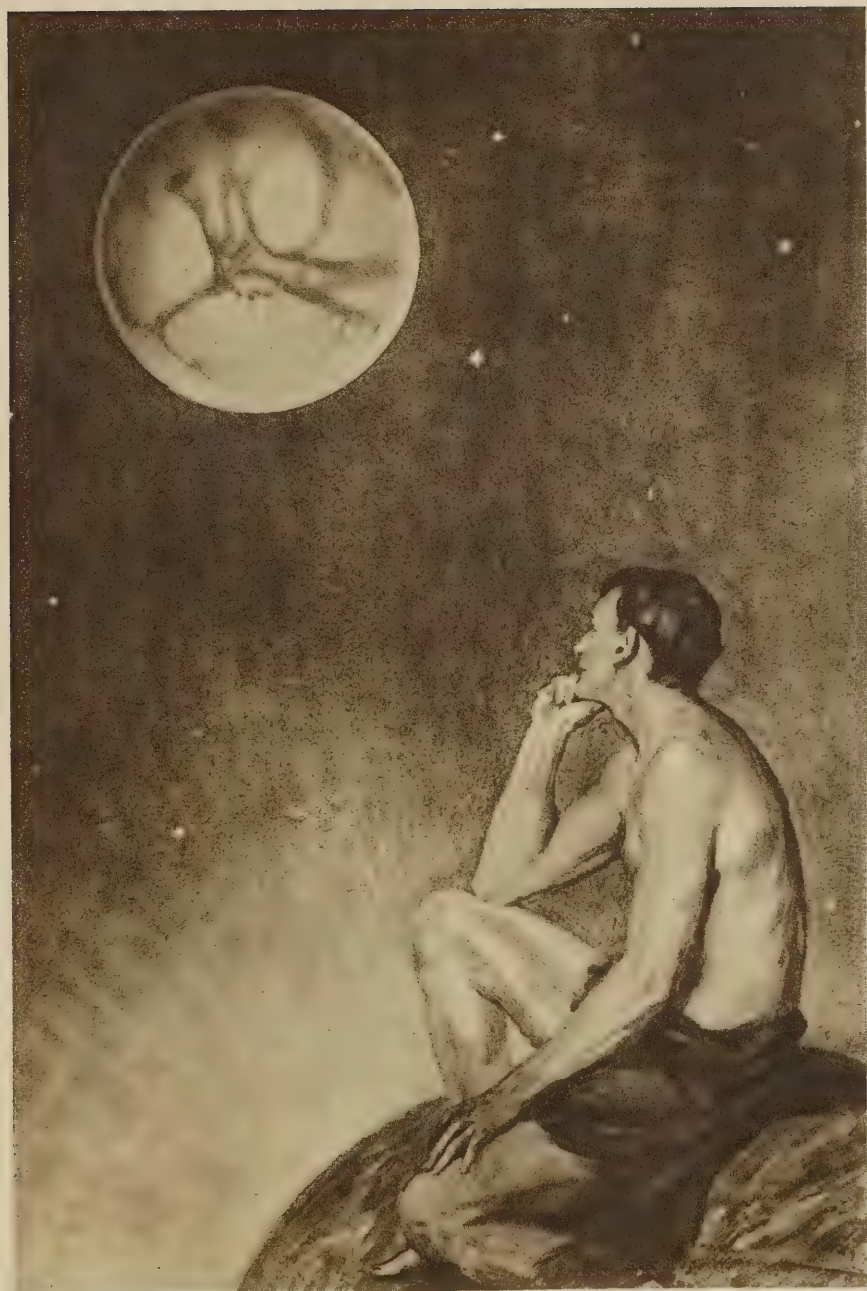
No, it is not the thought that a world may lie in a speck of light that moves us most ; it is the thought that there may possibly be on Mars a sort of life beyond all the dreams of men.

Mars, the little red world that comes within forty million miles of us sometimes, so that we seem quite near neighbours, is older than our Earth, farther advanced in evolution ; and so any life that may be there is probably finer, grander, greater, than any we can know. Shall we say that, compared with ours, the difference may be as the difference between what the preacher would call the life of Heaven and the life of Earth, infinitely and immeasurably beyond the difference between the Age of wireless and the Age of stone axes. We need not imagine that men are walking about on Mars wearing coats and hats and carrying watches, living in houses, riding in trains, or reading books like this. Our thoughts must go beyond our cage, and we must come to feel, if we would think on these things, that there are more things in the universe of God than men on Earth have dreamed of. It is no doubt true that no other world we know could house such men and women as we know, but is it not true, too, that man as we know him may not be the highest and ultimate conception of life ? There is a gulf between Shakespeare and the ancient Briton ; there is a gulf between the ancient Briton and his far-off ancestor who lived in trees ; but who shall say that there

may not be gulfs immeasurably beyond all these between the greatest man alive today and the average man who will be alive in a million years ?

And so, when we think of life on other worlds, we must think of a life beyond ours. The men on Mars, if they are there, have got beyond our ways. Lift the burden of war from the world, and man can grow. He can settle down then to the only war worth fighting, the war that lifts man up and carries him onward, that helps on evolution, that follows Nature and obeys her in order to command her. Here we toil painfully and slowly, but what great heights Life may have reached on Mars, and how far advanced the mind of man may be out there—who shall tell us these things ?

We can only guess and dream, and we may never know. Perhaps, after all, there are no men on Mars ; perhaps Mr. Lowell was wrong. Perhaps the marks he saw—sixty miles wide and seven hundred thousand miles long—are not canals at all ; there are those who say they were but fancies of his dreams, or shadows on his eyes. Strange that a man may mistake a shadow or a fancy for the greatest thing in all this universe ! One thing at least we know—the worlds move onward to their destined end, and Earth moves with them. Some mighty destiny there is awaiting us, here or there ; and those who are wise will be ready, now or then.



HAS MAN A BROTHER IN THE SKIES? THE SOLEMN WONDER OF THE FACE OF MARS, PERHAPS
THE ONLY MARK IN THE HEAVENS NOT MADE BY THE HAND OF GOD



THE STORM—FROM THE PAINTING BY G. HAQUETTE

But an hour ago we could have felt the stillness in the air, and now the Moon has gone ; the wind is racing through the wood ; Nature, armed with her lightnings and thunders, is knocking at the door.

THE STORM

THE great dramatic hours of Nature are rare enough for us to remember all our lives. We go to sleep at night, and even the face of the Earth is different in the morning. The ivy is stripped off the old church tower, the elms that have stood three hundred years are stricken to the ground, the glorious avenue has disappeared. We take up the telephone and it will not work ; we try to send a telegram in vain. In an hour the world has changed, the face of the Earth and the conditions of our lives. The trees that were the glory of the wood are flung down and uprooted. The great systems of communication come toppling down. Houses and lives are swept away, with the cattle on a thousand hills, and terror flies through villages and towns.

Man, with all his powers, is apparently farther today from controlling storms and winds than he was a thousand years ago from sending the Mauretania across the sea. In these wild hours when Nature breaks through her eternal calm, the man who is conquering the Earth is still as a grain of dust.

And what are the wild winds saying in the storm ? Perhaps they are reminding us once more that behind our little lives are mighty things we do not understand. The sleepless ministers of Nature move on silently. Centuries are nothing to them ; a thousand years with God are as a day.

And so it is that the whole world of men has been curiously deceived. We live in a dramatic age, the age

of the newspaper and the kinematograph, and we can neither see nor think of power and movement apart from the evidence of our eyes. Something big must happen to impress us. It takes a European War to make some people realise what is wrong with England. A little town must kill an alderman before it can get a street widened, and perhaps we shall have to burn to death a whole board of railway directors before we get rid of gas lighting in trains. It is the dramatic and unusual thing that strikes the average mind of man, and it is the average mind that holds the power.

And perhaps it is Nature's quiet ways that are responsible for one of the greatest misunderstandings men have ever made. We have come to associate power with noise, and for a thousand years there will be people who think the man who shouts the loudest does the most. Well, we have been listening to the voice of Nature, and shall be wise to try to understand what Nature has to say. She is reminding us, in her effective way, where the eternal powers of this world lie. God was not in the thunder, nor in the fire, but in the still small voice; and out of the still small voice, out of the long deep silences, comes the power that guides and moves and orders all mankind. We think of the eruption that destroyed Messina, and no mind can conceive the awful power imprisoned in the heart of Etna; but the French Revolution was a greater thing, and it grew from the mind of a man. The silent power of thought is greater than an earthquake; it is shaping human history all the time, and moving even matter to its will.

And so the lesson of the storm, the voice crying in the winds, holds something precious for us all; let it stamp upon our minds for ever the thought of the bound-

less powers for ever working round about us, unseen and all unguessed at, yet vital to nations in every hour that they exist. These invisible powers of Nature, of which we think so little, are the foundations on which nations rest. Without them Europe is nothing. Without the power that comes to us across ninety million miles no life is possible, the world could not go round. We use this power in a thousand ways, and are never tired of talking of our cleverness ; but the power lies there waiting for us, and we can neither create it nor destroy it. We take it up and use it as a child picks up a stone and throws it. It is hidden in Nature and man has found it : that is all.

The Great Muddle of Europe goes on, and such confusion and commotion there is above ground as never man has seen before ; but beneath, an inch or two below our feet, work silently without ceasing the powers on which Europe for ever depends. Pick up a grain of soil and look at it, and it is nothing ; you throw it down. But that grain of soil is a workshop packed with millions of living workers, all working to one great end. They work in sympathy and are never still ; they never strike and never weary. If there could be such order in a human system the affairs of a nation would work so smoothly that nothing would ever go wrong. Under the snows of winter lie the makers of the spring, the bringers of summer—millions of creatures that no eye can see, with powers that no mind can grasp. They can take the invisible powers in the air, and with the help of other tiny things they turn them into gardens full of roses and forests full of oaks, or into waving fields of corn. It is not chance that these things come ; they are as much made by living creatures, by the expenditure

of energy and the working of laws, as a table or a telephone or a loaf of bread. We do not see the workers, but there they are.

So the silent powers of Nature work their way into all our lives. The storm is for a season, but the calm is for all time. And, in the calm that comes upon the world when the storm is still, how wonderful does Nature seem ! The things that made the storm are the oldest things on Earth ; from the beginning of the world they have been what they are. For ever the winds have been rushing round the world keeping hills and valleys, deserts and plains, streets and lanes, sweet and clean. For ever the waves of the sea have been rolling on and on. For ever the rain has been falling, since the days when it fell red-hot. But age is not the only wonder of the storm. We have seen its power and felt it, but who, as the rain splashes into his face, thinks of where that drop of water may have been ? It may have been to the lowermost depths of the sea, it may have been up in the clouds on an eagle's wing, it may have been a dewdrop on a golden daffodil, it may have fallen on a little coffin or a monarch's crown, it may have been around the Earth ten thousand times.

So, out of the storm, comes the still small voice, if only we will listen.

Darkness and storm and doubt—have they not ever been sisters? How terrible at times is the silence of the night, with the whisper that perhaps, after all, the world is just an accident, and God a dream.

IS GOD CARING FOR THE WORLD ?

WE know nothing about it, the cynic will say, but the longer we live the more certain we are that the universe was planned and built for us.

We come out of mystery into mystery, through a few years of consciousness, but certain it is that the power that controls the boundless heavens and the rolling seas controls our lives. The science that forbids you to believe your pen-knife came by chance to your pocket forbids you to believe that the Earth became by chance the home of life, and that a speck of matter grew by chance into you who read this book. Two of the greatest thinkers of our time were Herbert Spencer and Charles Darwin, and both believed that the world was created and controlled by an omnipotent Mind. Herbert Spencer, living by sight and not by faith, believed in an active unknown power behind the universe, operating not only millions of years ago, but now and always, *transcending human conception*. Charles Darwin refused to believe that life was all blind chance: he looked out upon the world and saw endless beautiful and wonderful forms still being evolved from life breathed into the Earth by the Creator. Professor Tyndall saw in Evolution the development of a plan laid down in the beginning, and the mind that is balanced in reason, looking back on the things we know, sees in it all the directing and controlling Hand of God.

The thought we cannot escape from is that God built a house, prepared it for man, and brought man into it.

The wonder before which the mind of a man must fall unless he believes in God is that a thing as complex as a watch was made unthinkable ages since, all working in perfect order, but with a missing part, and that at last the missing part sprung by chance from nowhere, fitting perfectly. There is not one chance in a myriad millions that it could have happened without a controlling mind, but the marvel of human life is greater even than that.

For we depend for every breath of life on an intricate balance of forces, and a subtle regulation of processes, that the wisest mind can hardly grasp. Let some little thing go wrong in the balance of this world, and man is blotted out. Yet he came into the world and found that all was ready; the whole machinery of his life was running at the height of its efficiency on lines laid down millions of years before he came. Here are two things separated by vast gulfs of time. They come together and fit as a key fits in a lock. *Life found waiting for it the exact conditions that were needed to develop man.*

Along some ways Life has turned back. It has crept into creatures which have grown huge and fearful, and have become extinct because Life had no use for them. Thousands of experiments must have failed, yet in her failures and successes Life has been striving along one central way, moving ever forward, from lower to higher, from darkness to light.

We realise it in a hundred ways; let us think of one. Think of Nature's remarkable development of similar things in different places and in different ages. There is nothing more astonishing, more apparently incredible.

If we take as an example the eye of a familiar creature—let us say the common scollop—we find it similar to a mammal's eye in all its details, yet these two eyes

developed separately, with different origins and environments, ages after the ancestors of each creature passed away. Now, the development of an eye means also the sympathetic development of a host of other things, all marching to the same end ; yet two distinct creatures, starting separately and ages apart, with no sort of relation between them, both blind since they left their parents, begin developing an eye, and build up a power of vision on exactly the same lines. Even if two stones, dropped on two islands, were to build two cathedrals, we should hardly expect the architecture of one to be a perfect copy of the other ; but if we did find that we should need to go to Bedlam to learn that it was all an accident.

If men should say to us that it is impossible to conceive a Creator behind the world, let us ask them by what possibility they conceive the world *without* a Mind behind it. Let us ask them to tell us how it came about that water happened to have the power of expansion when it freezes, without which life upon the Earth would have been impossible. Let us ask them how it happened that the average temperature of the air is what it is, when the difference of one or two degrees either up or down would end the human race for ever in the morning. Let us ask them how it happened that the air was made so that a lightning flash does not explode it, when the addition of another gas would have set all the Earth on fire. Let us ask them how it happened that the leaves of trees are made in such a way that they live on the poisons that are made in our bodies and save the human race from death. If a president of the British Association tells us that a man is an aggregate of chemical cells, let us ask him if the cells of a mastodon could have founded the Roman Empire, if the cells of a coward could have sat

on Cromwell's horse at Marston Moor, if the cells of a king's jester could have taken the letters of the alphabet and arranged them in the order of the Psalms.

We need not waste our time on the suggestion that a heap of steel filings could fly about in space and join together to make a watch which would tell the right time and never go wrong in a million years ; but that is what we are asked sometimes to believe about the making of the world. The mind of a man has not yet come to believe in that.

In spite of overwhelming odds, the mind of man has discovered the history of itself and the hidden workings of the law of life. If we look back into the past and think of the great book of knowledge men have built up in these last few hundred years, we are staggered to think how great it really is. The chances against this book of knowledge were millions of millions to one. What evidence of the past is left for us to see ? A few stray leaves swept into lakes and preserved in mud, a few flies in amber, a few skulls and skeletons in river-beds, a few remains of creatures once living in the sea.

No destruction could be more complete than the destruction of the signs of life in the ages past. Of every hundred kinds of animals and plants in the Coal Age over ninety were blotted out, and again and again general disaster has thus come upon the Earth ; yet man has read the tale of the past, and torn aside the veil, so that we know what happened, and how it happened, in the world which no man saw.

And the mind that has fathomed the hidden secrets of the past, reconstructing evolution from fragments here and there, is not to be deceived. When it picks up a bird's feather and finds that it has a special shape and

texture of its own, when it finds that no two feathers of a bird are alike, that the quill of a feather is an elastic web made up of thin plates split into over a million parts and that a bird may have thousands of these quills, the mind which grasps the meaning of these things is not to be told that they happen to be so, and that they are part of some great chance by which the Earth came to be what it is.

We must fit our minds to the thought that God was in the beginning, is now, and ever will be, and that He is for ever intervening in the world. If some dramatic event occurred tomorrow by which there fell from the skies some weapon which destroyed the powers of evil on the Earth we should think it the intervention of God, but it would not be more so than the slow upbuilding of that love of truth and justice which will destroy the powers of evil in God's good time.

If the power of evil is doomed to fail, it is doomed because the sense of right, and truth, and honour, and justice is inherent in the human race. Who put it there ? Without this love of justice, without religion, the world we know could not have been. There would have been no civilising generations of peace, none of those great periods of history in which man has sought and found the way the brute has missed. Without this sense of right we could not have freed the slaves, we could not have founded human liberty, we could not rule India. And this love of justice in the human heart, this faith in something nobler than we know, is the working of the Mind of God in man, the intervention in human affairs of the Creator and Ruler of the world.

We must not think God is not intervening because He does not intervene as we think best. If man had been

at the beginning of the world the ways of God would have seemed to him beyond all understanding. Men would have thought volcanoes stupid things, and deserts an appalling waste. But the more a man knows about this world the less he thinks like that. Volcanoes and deserts are vital to us all, spreading the atmospheric dust without which there would be no rain. The reptile which was once the king of Earth would have seemed a useless and horrible thing then, but the reptile kept the rivers sweet through age after age, and long before man came, with his laws of health and sanitary systems, the Earth was cleaned by vermin. For millions of years light and warmth were pouring down, but this power was not wasted. Nature, which knew that man was coming, saved it for him.

All through these years God was intervening, and when at last man came, a puny thing against a mastodon, he brought a new thing with him that was stronger than brute force. In the struggle for the mastery of the Earth it was David, and not Goliath, who conquered. If man was born to struggle, his struggle against Nature fitted him to master Nature. The power that had made the Earth for man and furnished it for him has not deserted him from then till now. There are a thousand witnesses.

Think of the microbe. It has such constructive power that in an hour or two it will give rise to a million more, with such destructive power that they may annihilate a town. Such creatures could destroy the world; they could have made the Earth unfit for man if they had not been checked. Who held this power in leash through all these years? Who holds it in leash still? Think of the electricity with which the Earth is highly charged; it is said to be charged with electrons to a potential power

of a billion volts, with thousands of millions of free electrons in every square inch of its surface. Who restrains and controls this appalling force, of which all that we hear outside our own electric wires is a thunder-storm now and then ? Think of the marvellous and intricate balance of the forces of life, matter and life and all created things depending on each other, with their varied needs and inclinations all balanced in the scale. Who controls and overrules it all ? The equality of the sexes, a thing beyond all human power—who maintains it ? It is the intervention in human life of powers outside the human race.

It is not incredible ; it is the plainest fact of life. The powers outside us are endless. Again and again in history the works of man have been stopped by some invisible force. Things no man has seen have brought great schemes of man to nought. The powers by which man conquers, the powers by which he may be overcome, are beyond our understanding. Is it easier to believe that they come from nothing, out of nowhere, than that they come from God ? God does not work like a conjuror, making the world in six days and ruling it with a magic wand. He has chosen other ways to control and direct the world. He has chosen the simple to confound the wise. We look for fire and thunder, but God is in the still small voice.

God will not fling His thunderbolts about, or let loose His floods upon the Earth, or send His storms and lightnings with messages to man ; but He will use the weapons He has made to suit His purposes. He will work through the mind and soul of man. The kingdom of heaven is within us. It works for ever through the world, building up and broadening out until it covers the Earth, leavening here and leavening there until the whole is leavened.

And yet, we hear men say, man is but a creature of an unknown Power, tossed and blown about like a reed in the wind. Is he? What has he not done?

HOW MAN HAS MADE HIMSELF IMMORTAL

SINCE he stood helpless and naked and dumb upon the Earth, what is it that man has done?

There are those who say that he will never conquer War, but have they thought, we may wonder, of the things that man has done? He has made the Earth the place it is; his transformation of the planet is a feat that may well be compared with the laying-down of the coal forests or the creation of the river systems. Truly we may say that man has made himself immortal, whatever may come of his body when he has done with it. Let us look for a moment at one of the first great consequences of man's partnership with Nature.

Life, in advancing its great purpose, transformed the gills of a fish into the larynx of a human being, and so, from a lowly tenant of the seas, there sprang the music of the nightingale and the orations of Edmund Burke. So Life broke the silence of the void and sent on its way the promise of the human voice. The next step lay with man, and was taken in the dim days that no man knows, when the alphabet was invented.

Man, inheriting a voice, gave himself a language, and his language has made the difference between the men who lived in caves and the men who printed this book. No intelligence is possible for a human born without an alphabet, so that man has created an environment which makes a difference to living creatures as great as the difference between a gorilla and a man. If all the things



ARISTOTLE, THE MASTER MIND OF THE HUMAN RACE IN THE OLD DAYS OF THE WORLD



REMBRANDT MAKES HIS MOTHER'S FACE IMMORTAL



MOZART BRINGS INTO THE WORLD A MELODY THAT WILL NOT DIE

From the painting by Charles Baude



KEATS SETS DOWN A THOUGHT THAT REMAINS A THING OF BEAUTY AND A JOY FOR EVER

that men have made were taken from the world, the mastery of man would end tomorrow, and not only the British Empire, but all empires and peoples would perish. Man, that is to say, has *engineered his own development*.

And man, having given himself a language, has built up out of it a power that nothing on the Earth can contradict—the power of Mind. He has set up a vision that beckons on the human race. He has built up civilisation and brought all nations to bow down before the highest—for, whatever their sins in the world, the nations of the Earth are one in this, that they wish to be counted on the side of the angels. Man is stamping his soul upon the world for ever.

It is a triumph without parallel that man has made it impossible for the best that is in him to perish from the Earth. The human mind has made itself immortal.

We talk of immortality as if it were in doubt, but science has no doubt that Life and Mind are both immortal. Life is immortal, surely; it goes on from age to age unbroken. The simplest creature we can find alive is never known to die, but breaks itself up into two, and two into four, and four into eight, and so through an endless living chain. Our bodies pass away, but only the form of life-cells disappears: Life clearly does not die. And Mind is immortal, too; the child is father of the man, the man is father of the child, and human influence never dies away. By endless generations Life keeps up its everlasting chain.

Is there in the Evolution of the world another achievement that compares with the gift of immortality that man has given to his mind? We have only to think a little to realise what it means. Let us take one of those powers through which man has achieved this end. It is printing.

By the invention of printing man has made his mind immortal, *whatever may happen to the body he inhabits or the life by which he moves*. If Shakespeare had utterly perished when he passed from this visible world, his mind could not have perished with him. It lives today as when he walked in Stratford. Had Shakespeare been with us himself he could have had no greater power than he has still. When the first man who read Shakespeare read those last words of King Lear to Cordelia, they must have stirred in him the same emotions that they stir in you and me. When Shakespeare wrote

There's a divinity that shapes our ends,
Rough-hew them how we will,

he was giving the very thought that is in our minds just now to millions of people then unborn, and he will be giving this thought to people in a thousand years to come.

Consider the full measure of this power that man has added to his mind. In the days before the Scientific Age ideas passed on from century to century in writing or in speech; but how vague and scanty are the legends, the few proverbs and commonplaces that have come down to us from the rare literature of the early world. It is all very different now. The days when knowledge was gathered with peril, spread from place to place by a faithful few, often at the risk of life, have passed for ever, and nothing can be lost again. Let us look at one or two instruments that man has made to secure his immortality, and to make himself independent of time and space. They are not less truly instruments of Evolution than the Sun or the wind or the processes of chemistry.

If we take three of these instruments—pictures, music, and books—we see at once a vision of the processes by which Evolution works consciously through the lives

of men. Who can listen to the mighty dramatisation of sound that we call Handel's Messiah and not feel something of the power and grandeur of natural forces? Who can look on the materialisation of a vision that we call Raphael's Transfiguration, and not feel something of the mind that conceived it, and the spirit of the solemn scene it represents? Who can read the immortalisation of piercing anguish in Mrs. Browning's Cry of the Children, and not feel back in another age, listening to the beating hearts and sobs of little ones whose graves have been green these sixty years? The old, old story that thrills you as you sit remembering by the fire, the book that stirs your mind and opens up another world of thought for you, the picture on the wall that grips your heart as in a vice, are instruments of the soul of man working in you across the Earth and through the years. They carry the mind to far-off places and to other days; a sound you heard in Egypt comes, and you are on the Nile again. They bring back memories of friends that we shall never see again on Earth; they move us to gladness and tears.

And so, through ages yet to come, the songs, the books, the pictures that we know will stir the hearts of men and women; they will carry into the centuries the mind of the age that gave them birth. It will not die, and its influence will not fail. He who fashioned the Earth, who gave birth and form to matter, who created Life with all its countless powers and kingdoms and set Mind in lordship over it, has not failed in that mighty work of Evolution by which the human mind has broken down the barriers of time and space, and clothed itself with immortality.

*And where will all our progress lead us? To
what end are our great inventions, the mastery
of time and space and invisible things?*

YOUNG MEN SHALL SEE VISIONS

It is one of the amazing triumphs of the mind of man that, when faced by human impossibilities, it makes a machine to do them.

Man has today a million times the power he had a thousand years ago—power won from Nature, snatched from wind and river and sun. He is taking hold, as we have seen, of the invisible powers of the world. He is harnessing natural forces to do the work his own hand cannot do. He sends his messages through the air; he hitches his engines to the rivers; he floods the dark world with light drawn from the ether. Shakespeare put a girdle round the Earth in forty minutes; man can do it now in four.

Man can photograph a thing he cannot see; he can magnify sight and speech, and can store up sound. He can run like a deer, can fly like a bird, can swim like a fish; but he can do more, for he can travel faster than a bird, by a power that he can stop with his finger, and he can cross the Earth and not lose touch with home. From mid-air and mid-ocean too, from down in the earth and down in the sea, he sends his message where he will. The time will come when man will lengthen life, but while that day waits he abolishes space and time, and magnifies the work he may do in his allotted span.

Man, in truth, is getting beyond his senses, so much more powerful than himself has he become. He has turned his telescope into the heavens and found what

they are made of. He has photographed invisible worlds, and studied their movements so closely that he has guessed new worlds beyond ; he has prophesied that at a certain time a new world would appear a thousand million miles away, and has pointed his telescope to that place at that time, and found the new world there. Men have found new elements in the Sun before they have been found on Earth ; by studying the light from other worlds they have measured these worlds and weighed them. We know the surface of the Moon better than we know some parts of Australia. We know the Moon so well that men say it will go farther and farther from the Earth, and change our days and nights so that they will be as long as months ; and many things are more unlikely than that the Earth will one day cease revolving, so that one half will be in everlasting day and the other half in everlasting night.

So well do we know the heavens. Yet, if the telescope has introduced us to a vaster universe than our minds can conceive, the microscope has opened up a world of wonder that is beyond all our imagining. Perhaps the greatest lesson that man has learned in a thousand years is this—*that in Nature it is as far to the innermost as to the outermost.*

The universe which reaches out for millions of millions of miles is not more wonderful in the distant heavens than in the world about us. Distance is as great in the microscope as in the telescope. We look into a thing as small as the point of a pin, and find it a work of art that no artist could rival. We know from the telescope that above us and about us are millions of other worlds ; we know from the microscope that beneath our feet are toiling armies vaster than Alexander's.

But there is a depth in the universe that neither telescope nor microscope can reach, and in this Age of Wonder man is tearing down the veil from this new world ; through the gates of this unseen kingdom he is marching to new knowledge and to greater conquests. Nothing in the history of the world has ever happened to compare with what is happening now. If a dumb race were suddenly to find the power of speech, or a blind race were suddenly to find the power of sight, it would not be more marvellous than the discovery of the invisible ether by a race which has hitherto obtained power only from material and visible things. Speech by wireless, printing by wireless, power by wireless—all these have come within our grasp in our own time. Long before most of us are old and grey our voices will be carried across the world by unseen messengers ; we shall write letters across the seas with unseen pens ; we shall ride in motor-cars and trains driven by unseen ether waves.

If some power should come into this world tonight, and should throw open the sky and reveal behind it another world precisely like our own, it would not be more astonishing, more beyond our comprehension, than the ether world which man has found and harnessed since we were born—the world of invisible power such as the human race has never dreamed of, but which more and more mankind is destined to control.

It seems but the other day that men found the invisible microbe that steals away our lives, the invisible chariot that carries our words through space, the invisible electron which shook the brain of science like an earthquake and broke in two the atom which was thought to be the foundation of the universe. Hardly yet have we begun to realise the wonder of these things which are

influencing our daily lives and shaping the world's affairs. More and more science is taking the hand of Faith and peering into the world that lies beyond our senses. More and more the invisible kingdom is becoming real to us; more and more science is seeking the unseen things; and the day will come when there will be written over every gate of science those immortal words of Paul: *The things that are seen are temporal; the things that are not seen are eternal.*

Not yet has man reached the end of Evolution. May it not be that man is even *in the midst of* Evolution; that, illustrious as his past has been, triumphant as his present is, his future will be nobler and nobler yet? Let us get into our minds this thought—that man, whose mightiest triumphs in the past have been in the realm we see, is advancing to the conquest of the unseen world upon which all else rests; that not until man's final conquest of the physical kingdom can he enter into the spiritual inheritance to which he has been heir through all the ages; and that this new march of science is in the line of progress laid down from the beginning of the world—the progress that hastens the time when the mind of man shall be in tune with the mind of God. What shall we say is impossible when man, who has mastered the beast and measured the Sun, controls the microbe that holds the scale between life and death?

Out of the deeps of Time came man. Through the mists of Time he grew. Down the ages of Time he goes. Whence he came, we guess; where he goes, the wisdom of ages does not tell. But the morning of the world is young, and young men shall see visions.

Yet, if God rules the world, if Man has all these wondrous powers, why should we wish to live in a world like this, with struggle and toil and pain and death for ever about us? What is the good of it all?

WHAT IS THE GOOD OF IT ALL ?

WHAT is the good of a world like this? the cynic asks, and the answer is that at least he is a cynic and not an ape, and there is hope that he may grow into a reasoning man. So the Cave Man, poor creature, battling with the elements, fighting the bear for his food, guarding his little ones from the wolf, may have asked his unknown God, What is the good of it all? So, if there had been a voice to ask, it might have asked when the reptile was king—What is the good of it all?

Has the movement of the world been good or bad? Only a clown can doubt. Has Human Evolution been long or slow? It has been almost like a lightning flash compared with Nature's Evolution. Side by side with the unknown millions of years of preparation for it, civilised mankind is but an hour or two old. Through how many millions of years animal instincts were weaving themselves into the life of man we do not know: we know that but a few thousand have gone to crush them out of him. We know that in a few thousand years the savage creature of the wilds has changed into a John Milton and a Florence Nightingale. We know that in this same few thousand years the brother of the wolf has become the faithful guardian of the child.

Those who know all these things will not refuse to believe that in a few more years we may see such miracles again. Man who has tamed the wolf may change these small English men and French men and German men into good Europeans, and *what then?*

Not even Evolution itself can do without the aid of man, so powerful has he become. Nature, working with the aid of man, has wrought great things she never could have wrought alone. Nature unaided can carry the human voice through space at a few hundred yards a second; but Nature and man together can take a voice round the Earth in the twinkling of an eye.

For a thousand centuries the human race moved slowly; for a hundred centuries men have built up cities and filled them with beautiful things; but the great quickening-up of the world is hardly one century old. Man is only a step or two on in his great march to the conquest of the Earth, but already he stands at the gates of a new dominion. He has found new powers and is peeping on tiptoe through the keyhole of an unknown world.

He stands there wrapped in mystery and thought. Think of the power that lies in a cradle. No man know what it may become. Dynamite is nothing compared with that. The specks of grey matter behind those blue eyes may change your life and mine for ever. The mystery of a baby in its cradle is like the mystery of man and his destiny: the things he may do are not to be dreamed of.

It is nothing that a thing should seem incredible or impossible; it is the incredibility of the world that staggers thinking men. In the amoeba days who could have guessed that the dinosaur would come? In the dinosaur days who could have guessed that man would come? In the cave days of man who could have guessed that Shakespeare would come? And who in Shakespeare's day, except perhaps some poor wild Roger Bacon, could have conceived the Wireless Age?

Only the dullard or the fool believes a thing impossible

because he cannot understand it. The fool has said in his heart "I will not believe what I cannot explain," but no man has explained the fool. The priceless and boundless possession of every man is the faith he has, and every stronghold of science, every fortress of truth, every citadel of reason, is behind the faith that all is well.

We talk of the armies of heroes who give their lives for England and the flag. There is always an army of heroes giving their lives for England. What are they doing, and what are their victories? They are transforming human life. Take the fight against disease. About fifty years ago the cause of disease was as unknown to men as it was five thousand years ago; now we are conquering disease by conquering the cause. Plague, which in one year sent half the people of England to their graves, has disappeared; smallpox and leprosy have followed it; diphtheria can be cured whenever it is found in time; and a practical guarantee against typhoid is given to every soldier. It is true that four hundred thousand people are always suffering from consumption in these islands, and that eighty thousand die in every year; but we can stop consumption when we like.

We are lengthening life with every year that goes, so that a child born today has not only a greater chance of life but a chance of a longer life than its father. Seventy years ago more people died of bad drains in this country than in any year of war in our history, and half the children born in England perished like flies on a summer's day. From tonight till this night next year about half a million people will die in these islands—as many people as there are in Rome. But if there had been no laws of health for fifty years half a million more would die, and a dead Birmingham would be added to a dead Rome. In fifty

years the saviours of health in this country have saved as many lives as there are white people in all the British Commonwealth beyond the seas.

And of course we are going to stop Drink, as America is doing; we shall stop drinking alcohol and make it drive our engines. Perhaps the greatest moral service science has rendered the world in these ten years has been to prove that the teetotalers have always been right.

In the new age coming science will give us power and power will give us leisure. Industrial slavery will go the way of physical slavery, and men will give their reasonable labour, and not their bodies and their souls, for bread. In olden days it took four hundred thousand men to do the work that one train will do. The shame is that this advance of science has been used, not to reduce the toil of the many, but to increase the wealth of a few. But the progress which is the release of the human race from toil, as Herbert Spencer says, is coming at last. We are beginning to use the power of the Sun and the running river, and Niagara has power enough at the Falls to do the work of all America. If all the power of Niagara could be harnessed it would give every human being in America a power-slave of his own.

It is said that in Athens every freeman had five slaves who did his bidding, and it is reckoned that, taking the power of coal alone, every British family has power equal to twenty slaves to do its bidding. On my desk a speck of matter is breaking up before my eyes, breaking up visibly on the point of a pin, giving off parts of itself day and night, for year after year; power and heat and actual parts of itself this speck is giving off, and will be giving off for century after century when a thousand years have gone. Inside every atom is energy like this, lost and wasted

now, so that the cleverest men cannot get hold of it. But men will get hold of it. It is the way of man, when he has found out such a thing as that, to find the key that unlocks the power. Already men are looking into the atom, measuring its mass, calculating its energy, and counting its population of electrons ; already a scientist has told us that if half a grain of radium were equally divided among all the people in the world he could detect and identify every speck ; and men who have got thus far do not suddenly stop. A race that could use these powers, says Professor Soddy, " would have little need to earn its bread by the sweat of its brow. It could transform a desert continent, thaw the frozen Poles, and make the world a smiling garden. Perhaps it could explore the outer realms of space, migrating to more favourable worlds." A radiant world will radium give us when that day comes.

We, too, have our great crusades. In fifty years to come our tragic Present will have taken its place in the incredible Past, and the story of our slums will read like the story of the children in the mills, the story of the Drink Trade will read like the story of the Slave Trade, the story of the Great War will read like another Fall of Man. The days are dark, but when was the outlook for the moral crusader brighter than now, with the hearts of all men yearning for the better days, and the power of men growing with each rising of the Sun ? We are learning that all life and all things are one, part of the plan by which, ascending from chaos and darkness, the work of God's hand shall be perfected.

We may be disappointed that the world has not reached perfection after a hundred centuries of history and nineteen centuries of Christianity ; but this world

will never reach perfection, for perfection changes with every age that comes and every age that goes. The vision of the fathers is the realisation of the children, but the children's visions only their children see. "To travel hopefully," says Robert Louis Stevenson, "is a better thing than to arrive." We must travel hopefully. We must not be discouraged because Life is a journey without an end; we must agree rather with the wise German who loved truth and said that, if God were to offer him the truth in one hand and the search for truth in the other, he would take the search for truth.

The world of today is beyond all the dreams of yesterday; the world of tomorrow will be greater than we can think. Nothing seems impossible. It seems more possible to us that men should fly to the Moon than it would have seemed to Shakespeare that men should fly to France. A few years before the war two men were discussing the German scare. "The Germans will come when they fly," said one. Well, the Germans have been, and they did fly.

Be sure that great events are always in the making; never a day but some seed is sown that will bear unexpected fruit. This seed of great events, how wonderful it is! The old monk Mendel, growing peas in a monastery garden—who could have seen that he was forging a weapon to drive back insanity and build up a stronger race? A young doctor in India, examining gnats until he fell asleep—what daring prophet could have seen the Panama Canal in that? An old man bending for hours over a flower on his Kent hilltop—who that saw him could have dreamed of the glorious conception of the universe that Darwin was building up for mankind? Pasteur poring over his tubes and his

microscope at Strasbourg—who knew that the beginning of the end of disease was there ?

We know the means ; we do not see the end they lead to. We can no more see the end of a discovery than the first man who made a fire could see the end of it. It is said that wireless telegraphy can be traced to a mathematical calculation by Lord Kelvin in 1853, and that one of the world's great industries can be traced to an idea in an article printed by an editor in 1865. Ninety years ago there was a pin's head of aluminium in the world, and for a generation scientists talked of it as a curiosity. But one man studied it, and now aluminium employs thousands of men.

“What is the use of it ?” somebody asked Michael Faraday. “Madam,” said Faraday, “what is the use of a new-born child ?” Be sure there is some use for everything new, and there were never so many new things as now, when chemists are making, every day, substances that have never been in the world before. If the rubber plantation falls short, the chemist will make rubber ; if sugar fails, the chemist makes it out of coal and calls it saccharin, though the poet, nearer to the truth, calls it the honey of prehistoric bees. The chemist can take a rose, break up its scent into parts, reproduce each scent by chemistry, and put them together in a packet for you to buy at a shop—the sweetness of roses made for a penny !

There is no limit to the promise of the future. We may not produce Shakespeares and Miltons, but we do produce Pasteurs and Listers, and there have been among us in our time men whose names will endure when some of the stars we see in the sky have ceased to shine.

*Who then shall limit man, man with all his
powers? Who shall dare to say what will be?
We have looked at the way we came and
at the wonder of the Earth. There remains
one question more: Where are we going?*

WHERE ARE WE GOING ?

It is the question of the ages, that all men ask, that none can answer. What the end of man may be no man can know. Out of mystery we came, into mystery we go. Science has no key that can unlock this door, no ray of light to pierce the outer darkness of man's horizon.

Yet it is written in the skies, the promise of eternal life. It rises up from the Earth in spring, it is the song of the birds in summer, it is in the falling leaves of autumn, it is hidden in the snows of winter. It is everywhere, always: from the beginning of the world, throughout all the realms we know, every hour of every day, life has been conquering death.

The world is growing old—I write among the hills where the age of man upon the Earth has been traced back for perhaps ten thousand centuries—and every year that man has lived Life has been growing more wonderful, more beautiful, more powerful. She has climbed up from the depths of the sea, where, as far as we know, she fashioned the first creatures in which she made her home. She has come up through kingdoms of strange wild things, through the marvellous growth of plants, until at last she has found her throne in man. All through the ages Life has been winning her way, covering the Earth and conquering all things.

Those men who flung their bodies like a living wall in the German path, that multitude of the flower of men who gave themselves

To serve as model for the mighty world
And be the fair beginning of a time

did not pass from a battlefield to annihilation in a grave. All this flower of mankind, this harvest of love and faith and truth and honour and courage beyond all words, this crowning glory of the human life of ages, was not to perish like a candle flame, to be blotted out as if it had not been. There are greater destinies in life than that. That would mean that all that is noble and generous, all the power and glory God put into life, can be destroyed by order of an emperor. It would mean that a microbe can destroy the soul of a poet, that all the qualities and powers of men are at the mercy of a dagger or a gun. It would mean the defeat of Nature and God.

Life does not build up her temples to bury them in the dust ; she does not give birth to her children, bringing them out of the darkness of night, through agonies and perils and fears, into the noonday sun, raising them to heights of power undreamed of, simply that they may go back into oblivion. There is nothing in the history of the world that can teach us that.

Our heroes are not in their graves. Somewhere in realms we do not know their power goes on. The something in them that we could not see or touch, but which we felt and knew was there ; the something that we loved them for ; the something we saw in the light of their eyes, or heard in the softness of their voice, or felt in their presence near us—these things are not in their graves. They are the crowning things that Life has made, the things that make us different from flowers and streams and hills and stones and from everything else alive. They are the instruments of God, the powers He has set in men to carry on His purposes ; and for them there is no death.

Life and its children go on for ever. No man of science dare say that Life is not immortal. It changes its

forms, that is all. That is the way of Life. It grows and multiplies and fills the Earth ; it becomes richer and more abundant ; but it never dies.

There are those who would have us believe that, because Science has not yet found it, there *is* no world beyond. Has Science, then, no future ? Is Evolution going on and Science coming to an end ? Are the powers and purposes of Creation to be measured by the understanding of a man ?

Do not believe it. Socrates did not. He knew that Science knows what it does not know. You remember the story. His disciples were weeping around him. "Where shall we bury you ?" they asked him, as he drank the hemlock. "Wherever you like," said Socrates, "*if you can catch me!*" Science has much to learn, as it has much to teach. We have been thinking of all the wonder of the world, and through it all, and behind it all, and beyond it all, is something that we cannot understand. What is the thing we call by many names, this something in man that is greater than all his works ?

It is the last great secret of all, and it lies, perhaps, in the grave. One thing we know of it, that without it nothing could be at all. Something there is in you and me that makes us different from a tree, or a star, or a running stream, and without that something this strange story of the human race, these great achievements of mankind, could not have been. Can it be, then, that this mysterious thing, this central source of all that is, shall pass away and die ? Not one atom of matter in the universe can be destroyed. Can the human mind, which takes up matter and moulds it as it will, be the only thing to perish ? Nothing, we know, dies. Shall *that alone which knows* be the only thing to pass away ?

This paper had a maker ; nothing we see about us came here by chance. Is man, then, the lord of the Earth, the one chance thing upon the Earth ?

There are still, here and there, men who, though they never got a pair of boots without a maker, think the world so much simpler than a pair of boots that it came about by chance. Pray that their eyes may be opened. Those eyes of theirs, that look out upon this lovely world—had they no maker, then ?

Not in all the world is there a more wonderful thing to think of than your eye. It has something of the power of the microscope, which can peer down into little things ; something of the power of the telescope, which can see far into distant things. No instrument that man has made can do the marvellous things your eye can do. Yet this eye was made in darkness ; slowly its marvellous structure was built up out of a tiny speck that no light could reach. And at last, when the eye opened out on the world, it was ready to respond to all the mysterious demands of light. It was like a wheel of a watch coming from nobody knows where, into the hands of a watchmaker waiting for it, and fitting perfectly into its place.

Who dropped that wheel from the skies ? Who made it and shaped it there, knowing the work it had to do, the wheels with which it had to fit, the number of teeth it had to have, the stress and strain it had to bear ? *Who made the wheel ? Who made the eye ?* Who knew the laws of light that the eye made in darkness must one day obey ? There can be only one answer to that question : it is God.

And has God, who made the heavens, who made your eye, who made Life stronger than Death—has God no power to drive back a microbe that would steal you from

Him ? Has the Power behind mankind no far-off purpose for His millions of creatures ? Is all the effort of the human race, is all the wisdom of the human mind, are all the things that men have thought and said and done, to pass away as in a breath—to go out as a candle ? Shall the works of man remain and the mind that made them utterly perish ? The existence of the world would be a hollow mockery, the hope of the world would be a ghastly farce, the anguish of the world would be a bitter cruelty, if there were nothing but nothingness at the end.

There is a haunting thought that comes when we think of the future of man. Behind all the wonder of the visible world is the wonder of things not seen. It cannot, surely, be without some meaning for us that science is dwelling more and more in that invisible kingdom where for ages past men have sought true peace. May it not be the beginning of the supreme wonder of the world—the proof of science itself that the final destiny of man is not to be sought in a physical realm ?

We are told that Matter does not exist, that what we see is but a sort of shadow, that only forces, and not Matter, are real. May it not be the beginning of the greatest discovery of all—the discovery that Life has in store for us a way of doing without the body and using only the soul of man ?

We touch the problem of problems here, the question that comes to all our lips. Can anything of us remain when this hand is gone, when this eye is dim, when this heart is still ? Human wisdom has not yet told us, but we may ask ourselves this : Has God, who made you once invisible, who packed all that is you into a speck no eye could see, less than a hundredth part of an inch across—has He no power to do that once again ? Has He, who

built this frame in which you live, who gave your mind this mighty home, who brought this body from a single cell and made light for you out of darkness—no power to keep your mind alive when it no longer needs your body ?

If life without a body is beyond the wit of man to understand, is life *with* a body quite easy to explain ? Are we so accustomed to understand and explain all we believe ? If men shall tell us they will not believe what cannot be made plain, let them tell us six ordinary things :

How a bee, blinded and carried five miles in a dark box, finds its way back to the hive.

How a cat, taken a hundred miles by train, finds its way back to its old fireside.

Why a mother wasp, before she goes away for ever, prepares for the children to be born when she is gone.

How a climbing plant turns aside to catch hold of a nail in the wall.

How a man's brain, working in his sleep, solves a problem which drove the man to despair when he was awake.

Why two feeble-minded parents have never yet since time began had one wise child.

He who believes only what he can explain has yet to explain how he can explain anything at all.

The truth is that the scientific past is much more difficult to believe than anything that faith in the future demands. It is easier to believe that your mind is something apart from your body, and will some day be able to dispense with its services, than to believe that your body came from a speck, that it is controlled by millions of millions of living bodies inside it, that it has within it the potentiality of a host of bodies like it, and that, if certain conditions are observed, we know what colour the eyes of our descendants will be in a thousand years to come.

Shall we not rather believe that there is something we do not understand than that Matter, the first created thing, leading up through wondrous ways until Mind obtained possession of it, should at last obtain control again and conquer Mind. That is the most unthinkable thought of all : it would be a conquest of God by the humblest work of His hand. It would be as if God, having shaped the Earth, having evolved life and mankind upon it, having created in man a mind worthy to be in partnership with its Creator, were suddenly confronted by Matter and ordered back, as the sea ordered back Canute. I will rather believe that the Power that has brought us thus far will take us farther yet. I will rather believe that the Hand that has guided Life along its tortuous ways has guided it, and guides it still, to a certain end.

The steps of Life—what have they been ? The great sea sweeps and tosses, caring nothing ; an avalanche dashes down, caring nothing ; one plant destroys another, caring nothing ; a wild beast tears another, caring nothing. And then Life brings forth a mother, who will die for another, *caring nothing*.

The heroes who have lived and died, the gentle women whom we love, the beautiful children who make heaven about us in this world, have come out from a past that is darker than night, through terror and savagery and murder and fear and ugliness, and worse than these ; and God, who has directed Life so far, who has made ugliness into beauty and hate into love and dust into stars and protoplasm into you and me, has not yet lost His ancient power.

Nothing in the range of thought, perhaps, is more impressive than the thought of the mind of a man, filling the

Earth with power, yearning to know, yet never knowing. The mind of a man can think of few things so dramatic, so fearful yet sublime, as this spectacle of the mind itself, enthroned upon this Earth of ours, watching the procession of all those who have lived, seeing them come and seeing them go, and then, lifting its eyes above the Earth, looking out on the universe into which it must go, wondering, wondering, yet knowing nothing of its destiny in that Infinite Beyond.

But be sure that we shall know. *To the good man no evil thing can happen.* That glorious and consoling truth, bequeathed to us by Socrates before Christianity had dawned upon the world, sustains us still through all the shadows of our days. No harm can come to those who trust the Power that moves the worlds. "What is man that Thou art mindful of him?" King David sang; "Thou hast made him a little lower than the angels and hast crowned him with glory and honour." Three thousand years have gone, and man is yet a little lower than the angels. But his feet are set firm upon the earth, his mind is reaching out into the universe, his face is set towards the throne of God. It does not yet appear what we shall be, but He who has brought us thus far will not leave us now. Far off the end may be, and dim our vision, but for you and me, as for Wordsworth,

Enough, if something from our hands have power
To live, and act, and serve the future hour;

And if, as toward the silent tomb we go,
Through love, through hope, and faith's transcendent
dower.

We feel that we are greater than we know,

The bells above the Norman Porch ring twelve o'clock. Night with her train of stars and her sweet gift of sleep is here. Another day has gone : one day less for this world of life and love and beauty, one day nearer to that world of wonder all untold.

Out of the darkness of night comes the whisper that half our life is done on Earth ; its high noon is behind us. So much to do, so little done : has it all been worth while ?

GOODNIGHT, YOUNG ENGLAND

PERHAPS you are still a boy, or still a girl, with the golden years about you, and all the glorious opportunities of life to come. Perhaps you are dreaming still, and living in the world that is going to be. It is great and splendid to be very young in these days, growing into the dawn of the Age of Peace. But how is it to begin to feel no more a boy ? I have tried it, and I am not sure.

I have thought myself a boy ; I have tried to forget that Time goes on and we go with it ; I have pretended that I belong to you and your age, and not to the grown-ups and theirs. I lived through all your happy years when we were writing and reading the Children's Encyclopedia ; I loved to begin all over again, and wonder how the steam lifts up the kettle-lid, and how a flower is born, and why the roof does not fall down, and what it is that makes the engine go, and why the lark gets up so soon and goes so high to sing his song. It was good to think about it all again, and be a boy with you.

And even as the years rolled on the world went round so fast, and every day there were such new things, that there was never a moment to think of the years that were passing away. Such a lot there was to do, so many things that must be done before one could stop to think that perhaps he would never fly a kite again. And even when,

at last, I really gave up flying kites, when I could do something for England and vote for Parliament, it was always Little England that came leaping into a heart that loved her more than all other lands on Earth ; it was your England, Merrie England, that I lived in still.

But at last, whether he will it or no, a man must count the years ; there is an end of pretending when half a man's life is over and done. He looks back and thinks, however busy he is, and what things there are for him to think about ! He is back in a flash at the other end of the years, in the home he left so long ago, at school again, and friends and places fly through his brain as fields and towns fly past him in the train. Faces he will never see again come back. The firesides at which he was a welcome guest, the quiet places he loved in the garden and the fields, the streets, the shops, the games he played, the books he read, the rides he had, the sunsets he watched from the hills, run past each other in his mind, and all the things that make up life he lives through again.

But it is not these things, crowding and rushing through his brain, that seize him and bring a sort of sadness with them when night comes and youth is gone. He thinks of all the hopes of other days, of all the things he tried to do, and nothing seems quite as it was to have been. Has it been worth while, all this planning and toiling ? How many things he would do differently now ! How many he would never do at all ! How many times he would have gone the other way ! Life is ever like that, and only the stupid are satisfied. We aim at the stars and hit a mountain-peak, or perhaps we hit only a lamp-post ; and even so, as we look back, the thing we did seems less well done than it should have been. The thing that pleased us yesterday brings less satisfaction

tomorrow ; there are always new horizons, and the end is always farther off.

The disappointments of life—ah, how beyond all counting they seem when we look back ! It is said of Charles Lamb that he went through life like a jester with a breaking heart, and how often we find our lives like that ! We set out on a brave journey, with the spirit of adventure strong in us, like the men who sailed uncharted seas and cared not where their journey ended, so glorious was the way ; and then a cloud bursts and the storm comes, and somehow there are always clouds and storms, and nothing seems smooth for long.

Perhaps there comes some shadow over the future, some unforeseen anxiety as to what will happen *afterwards*. Perhaps, through some mischance, there comes a lack of confidence that means so much to us ; perhaps we must set aside all those ideas on which we built our hopes. Or perhaps it is the carelessness or thoughtlessness or timidness of others that spoils the joy of life for us. Perhaps we pour out our heart to the depths and nothing comes back to us. Life, seeming so simple as we grow out of childhood into youth, is like a ravelled knot as we grow older, and we must often laugh if we would keep back tears.

And yet the power to laugh to keep back tears—how wonderful that is ! Life is worth while if you have that, and it is waiting for you. It is part of the well-balanced mind, and it comes from the right understanding of life. We are not to allow the disappointments of life to blind us to the incalculable glory of it all. Few sorrows are really overwhelming ; they bow us down, but Life lifts us up again and we hear the bells ringing and the lark singing, and we feel the gladness of the sunshine on

a field of waving corn. Out of the depths of the world our sorrows come, and the bitterness is more than we can bear, but out of the great heart of Nature our strength comes with each sorrow. The heart that knoweth its own bitterness findeth its own consolation, and it is the great consolations of this world, and not the great hopes of another, that make this life a glory from the cradle to the grave. Our troubles vanish one by one; the mountains are less forbidding as we near them; the difficulties that seem too great for us are conquered bit by bit; and if there is goal after goal, horizon after horizon, if one ambition is satisfied only for another to be born, the joy of *doing* is the eternal compensation for those whose work is never done. It is better to travel than to arrive.

The everlasting answer to all the sorrow of the world is that the joy outweighs it. Life's sunny skies count more than all its clouded days. It is full of surprise, its pleasures know no bounds, its glory and wonder are beyond all telling; and, toil as we may, dream as we will, suffer as we must, the years are worth the living, and it has been worth while. The Sun is in the heavens and the light falls on the hill, and all is well.

And so Goodnight, Young England, a sweet sleep and a bright awakening.

Our Father, Who art in Heaven,

Give peace to our world this night. Comfort them that mourn, and lift up all who are bowed down. Guide and guard and keep us through all the sorrow of our days.

Preserve us and defend us in trouble and in doubt; be with us in the Valley of the Shadow, that the light of our lives may shine through all the darkness of the ways of men. Take from us all selfishness and vain ambition; lift from our hearts all vain desires and all uncharity. Whatever way the world may lead us, turn Thou our steps aright.

Touch with Thy love the hearts of all Thy people, that they may remember Thy ways. Put away from us the spirit of unworthiness, the thirst for vengeance for the sins of others, the hate of any who have broken in weakness the vows they made in their strength.

Help us that we may keep the vow that we have made. Teach us to love truth and to hate falsehood; teach us so to live that we may keep our honour bright.

Uplift our hearts and minds, that we may love good and pursue it; let Thy spirit abide with us in the dawn and the evening of our lives.

Give us meekness that we may walk humbly before Thee; let us not be filled with vainglory in the richness of our possessions. Give us the love of our neighbour, that we may share with rejoicing the inheritance of the Earth. For what we have make us thankful, for what we would have make us worthy; for all the blessings of our lives let our lips and our hearts praise Thee.

Watch over Thy people in every land. Amid the tumult and the shouting let there be heard the still small voice that brings strength to the widow and comfort to the fatherless. In the hour when their hearts are breaking, when their hope is almost done, quicken the senses of Thy people that they may know that Thou art God. Let Thy power be known throughout the Earth. Let the wrath of men be scattered and the powers of evil broken ; let the tumults of the Earth be turned to Thine own ends, that freedom and love and justice and mercy may spread throughout all lands.

Remember those who uphold Thy laws, all who work Thy will in every land. Remember those who stand and those who fall ; be with those who watch and those who wait. In victory save us from excess ; in the dark hour of defeat grant us that trust in Thee which keeps us strong.

Give us the pure heart to feel Thy presence near us. Give us the clear mind that we may understand. Give us the stainless soul that shall return to Thee fearless when our time shall come. Give us the strong arm to defend, with all our heart, with all our mind, with all our soul, the glory of Thy kingdom.

Defend the right with Thine eternal might. Move the hearts of men that they may gather up their strength to do Thy will. Through the dark night let Thy peace encompass us, and bring us in the morning to the everlasting Day.

Amen.





